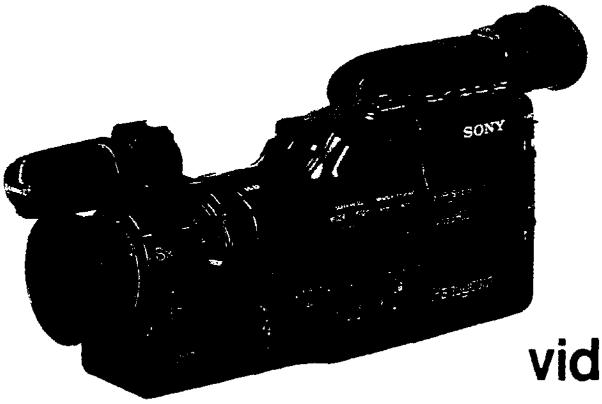
CCD-V600/V701
RMT-502

SERVICE MANUAL

US Model
Canadian Model
CCD-V701

E Model
CCD-V600



Remote commander RMT-502 is available as a unit, but as indivdual parts the battery case lid of commander is only available.

video Hi8 Handycam

U MECHANISM

SPECIFICATIONS

System

Video recording system	Rotary two heads Helical scanning FM system
Audio recording system	Rotary head, FM system (2 channels)
Video signal	NTSC color, EIA standards
Usable cassette	8 mm video format cassettes
Tape speeds	SP mode: Approx. 1.43 cm/sec. (19/32 inch/sec.) LP mode: Approx. 0.72 cm/sec. (5/16 inch/sec.) (playback only)
Recording time	SP mode: 2 hours (E6/P6 – 120)
Playback time	SP mode: 2 hours (E6/P6 – 120) LP mode: 4 hours (E6/P6 – 120)
Fastforward/rewind time	Approx. 7 min. (E6/P6 – 120)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (Black and white)
Lens	Combined 8 × power zoom lens f = 8.5 to 68 mm, F1.4 with macro Filter diameter 46 mm
Auto focus system	Infrared autofocus
Color temperature	Auto, one push white balance, 💡 3,200 K ☀ 5,800 K
Minimum illumination	3 lux (F1.4)
Illumination range	3 lux to 100,000 lux (0.3 to 9,294 footcandles)
Recommended illumination	More than 100 lux (9.3 footcandles)
Shutter speed control	1/60 to 1/10000 (16 steps)
Exposure control	Auto/manual (21 steps and CLOSE)

Input and output connector

Video input/output	Phono jack, 1 Vp-p, 75 ohms unbalanced, sync negative
S video input/ouput	4-pin mini-DIN Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.286 Vp-p 75 ohms, unbalanced
Audio input	Phono jacks (2: stereo L and R), −7.5 dBs Input impedance more than 47 kilohms
Audio output	Phono jacks (2: stereo L and R), −7.5 dBs at 47 kilohms input impedance Impedance less than 1 kilohm

— continued on next page —

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MICROFILM

Hi8 VIDEO CAMERA RECORDER

SONY®

RFU DC OUT	Special mini jack, 5 V DC
Headphones jack	Stereo mini jack, 8-ohm impedance
REMOTE Ⓛ jack	Stereo mini-mini jack
Microphone jack	External stereo microphone jack: mini jack, −66 dBs low impedance with 2.5 to 3 V DC, output impedance 6.8 kilohms
Microphone power output jack	Special mini jack, 5 V DC

General

Power requirements	On battery mounting surface 6.0 V (battery pack), 7.5 V (AC power adaptor), 9.0 V (alkaline batteries)
Power consumption	6.7 W (camera recording, including the viewfinder)
Installation	Vertically, horizontally
Operating temperature	0° C to 40° C (32° F to 104° F)
Storage temperature	−20° C to 60° C (−4° F to +140° F)
Dimensions	Approx. 105 × 142 × 350 mm (w/h/d) ($4^1/_4 \times 5^5/_8 \times 13^7/_8$ inches)
Weight	Approx. 1.2 kg (2 lb. 10 oz.) excluding the battery and the cassette
Microphone	Electret condensor microphone Uni-directional, stereo type
Accessories supplied	See page 4.

Design and specifications subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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Introduction

Overview of the CCD-V701

The CCD-V701 Video Hi8 handycam is a compact color video camera/recorder (camcorder). You can use it to shoot the pictures you want and play them back on your television set. It is equipped with a stereo recording system which offers high quality sound to match the Hi8 picture. The full featured camera section offers various camera adjustments to create just the kind of program you wish.

Who this Manual is for

This manual is designed for you. You can use this manual to find exactly the information you need, whether you are familiar with video equipment or not.

How this Manual is Organized

This manual consists of seven sections.

Section 1 explains the preliminary steps necessary to prepare for shooting and playback.

Section 2 explains the very basic techniques of shooting.

Section 3 explains how to playback the tape being shot in section 2.

Section 4 explains additional shooting techniques which will add flavor to your programs.

Section 5 explains the unique shooting techniques including the programmed AE mode and the manual mode.

Section 6 explains the techniques on how-to-edit your video programs.

Section 7 explains other useful information to enjoy the best of your camcorder.

If you have any problem during operation, see the "Trouble Checks" section.

If you are beginner, start with "Recording a picture with the automatic adjustments." If you are very familiar with camcorder operation, also refer to "Operating the Camera Section (2) and (3)" for advanced shooting techniques.

How this Manual Works

Refer to the information below to help you follow the instructions in this manual.

- Controls and settings on the camcorder are shown in capital letters:
  ex. Set the POWER switch to CAMERA.
- The letter in an illustration corresponds to the letter in the text:
  ex. (A-1) or **(B)**
- The step numbers in an illustration correspond to the step numbers in the text.
- Notes and cautions are enclosed with lines.
  ex.

Note on batteries
Battery will not last as long in cold places.

Supplied Accessories

The camcorder is packed together with the following units. Check to see that everything is contained in the package.

- Wireless Remote Commander RMT-502 (1)
- Size AA (IEC designation R6) batteries for the Wireless Remote Commander (2)
- Battery pack NP-66H (1)
- AC power adaptor AC-V35/AC-V35A (1)
- Lithium battery CR2025 (1)
- RFU adaptor RFU-90UC (1) (US, CND)
- RFU adaptor RFU-89NA (1) (E)
- Antenna selector (1) (E)
- A/V connecting cable (3 phono to 3 phono) (1)
- Video cable with S video connectors (4-pin mini DIN to 4-pin mini DIN) (1)
- Cassette tape (1)
- Shoulder strap (1)
- Jack covers* (1 set)
- Lens cap* (1)

Item with an asterisk (*) is attached to the unit.

Technical Information

Hi8 (High Eight) Video System

The 8 mm video system employs a metal powder tape. This means the video camera recorder is capable of recording a large amount of information and enhances picture quality. Taking advantage of the 8 mm video system, the Hi8 video system has been developed. The main characteristics of the Hi8 video system are as follows:

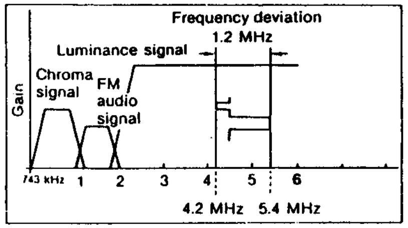
Super High Quality Picture

(A-1), (A-2)

The information capacity is a key element for picture improvement. It can be increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal is shifted up to 5.7–7.7 MHz. This is higher than the 4.2–5.4 MHz range of the standard 8 mm video system. Thanks to this, the horizontal resolution is improved to more than 400 lines.

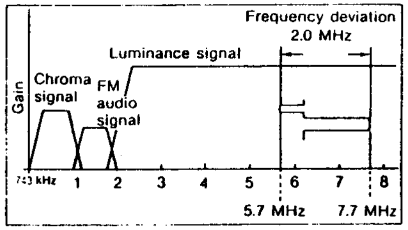
(A-1)

Frequency allocation of the standard 8 mm video system



(A-2)

Frequency allocation of the Hi8 video system



Use of High Grade Tape to Match the Hi8 Video System

Metal evaporated tape is ideal for video systems because it has large magnetic energy that allows for high-density recording. The Hi8 video camera recorder uses such high-grade tape for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

S VIDEO (Separate Luminance/ Chroma Signal) Input/Output Connectors

Conventionally, video equipment exchanges the composite video signal containing the luminance (Y) signal and the Chroma (C) signal mixed. The composite video signal is liable to produce interference resulting in picture quality loss. On the contrary, an S VIDEO connector transmits or receives the video signal separated into the luminance signal and the chroma signal. Flickers and color blur in the picture are minimized with the separated video signal, and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S VIDEO connector also assures an excellent editing quality with minimum picture quality loss.

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Compatibility with Conventional Video Camera Recorders

A high-quality picture can be recorded and played back on a tape for the Hi8 video system.

Recording with this unit

Hi8 tape **Hi8**

MODE SET menu "Hi8" to "AUTO" → **Tape recorded in the Hi8 video system**

MODE SET menu "Hi8" to "OFF" → Tape recorded in the standard 8 mm video system

Standard 8 mm tape 8

Regardless of the "Hi8" setting in the MODE SET menu → Tape recorded in the standard 8 mm video system

Playback with this unit

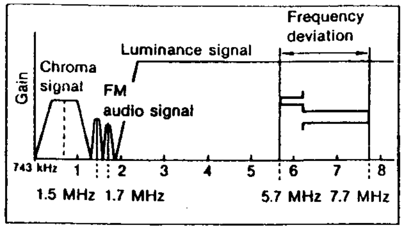
Tape recorded in the Hi8 video system
Tape recorded in the standard 8 mm video system
→ The recording mode is selected automatically

- A tape recorded in the Hi8 video system cannot be played back with an conventional 8 mm video camera recorder.
- A standard 8 mm tape 8 cannot be recorded in the Hi8 video system.
- A tape for the Hi8 video system cannot be recorded and played back in the Hi8 video system with a conventional video camera recorder.
- The recording tape speeds in the Hi8 video system are compatible with the conventional 8 mm format.
  Recording/playback time is 2 hours using a E6-120/P6-120 tape or the equivalent.

Cassette used	**With this unit**		
	Recording		**Playback**
	Hi8	**Normal**	
Standard 8 mm tape 8	No	Yes	Yes
Hi8 tape **Hi8**	Yes	Yes	Yes

(A-3)

Frequency allocation of the hi-fi system



Hi-Fi Stereo System

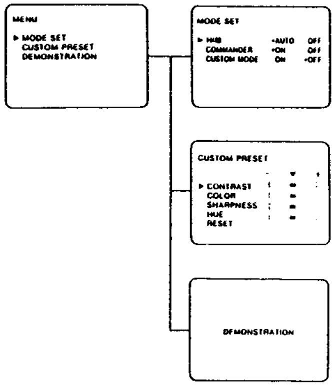
On the 8 mm video standard track the sound is recorded/played back in AFM hi-fi monaural. On this camcorder, an additional AFM hi-fi stereo sound can be recorded on the standard track.
The AFM hi-fi stereo sound is recorded as L+R on the 1.5 MHz carrier and L−R on the 1.7 MHz carrier in FM as illustrated. **(A-3)** This method was adopted to maintain compatibility with the conventional AFM hi-fi monaural sound.
When playing back the tape recorded in this hi-fi stereo system, a matrix circuit is used to produce the L and R stereo sounds separately. When a conventional AFM hi-fi monaural model is used to playback a tape recorded by this camcorder in AFM hi-fi stereo, the playback sound will be in an L+R monaural sound. This is because the monaural models will playback only the sound recorded in the 1.5 MHz carrier.
The AFM hi-fi stereo system of this camcorder enables you to enjoy a live stereo sound atmosphere.

Compatibility with the conventional 8 mm video format
When you playback a tape recorded in AFM stereo hi-fi on a conventional 8 mm video equipment, the sound will be in monaural.

On the Menu System

The menu system of this camcorder enables setting and adjustments to further enjoy the features and functions. The menu is displayed in the viewfinder or on the TV screen if connected to a TV. The menu consists of two main parts, one for camera recording and the other for playback and editing. Refer to the following section for a quick overview of the two menus.

(B-1)


MENU
▶ MODE SET
CUSTOM PRESET
DEMONSTRATION
MODE SET
•AUTO OFF
COMMANDER •ON OFF
CUSTOM MODE ON •OFF
CUSTOM PRESET
▶ CONTRAST
COLOR
SHARPNESS
HUE
RESET
DEMONSTRATION

Menu System for Camera Recording

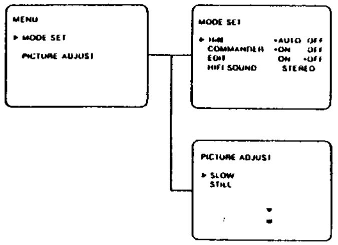
(B-1)

MODE SET
Various mode settings for camera recording is made in this menu.

CUSTOM PRESET
The camcorder can be adjusted to perform camera recording in the desired picture.

DEMONSTRATION
The camcorder automatically shows the manual mode, four programmed AE modes, each title mode, menu displays in sequence.

(B-2)


MENU
▶ MODE SET
PICTURE ADJUST
MODE SET
•AUTO OFF
COMMANDER •ON OFF
EDIT ON •OFF
HIFI SOUND STEREO
PICTURE ADJUST
▶ SLOW
STILL

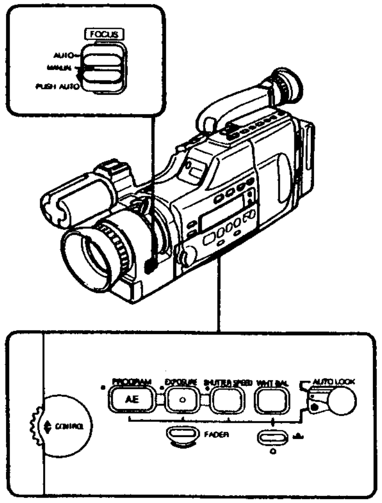
Menu System for Playback and Editing

(B-2)

MODE SET
Various mode settings for playback and editing are made in this menu.

PICTURE ADJUST
The playback picture can be adjusted to obtain maximum quality.

(C)



Selecting the Camera Recording Mode

(C)

Various camera recording modes are available in this camcorder. Automatic adjustment of aperture, gain, white balance, focus, plus the locked shutter speed offers worry-free camera recording for the beginner. Manual adjustment of each of these parameters offers effective camera recording to meet different object and shooting conditions.
Plus, the programmed AE mode offers additional shooting techniques to enrich the creation of your video program.

Full Automatic Adjustment Mode

When the FOCUS switch is set to AUTO, focus is automatically adjusted.
When the AUTO LOCK switch is set to AUTO LOCK, aperture, gain, and white balance are automatically adjusted and the shutter speed is locked to the normal speed (1/60).
The FOCUS switch setting has no relation with the AUTO LOCK switch setting.

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Manual Adjustment Mode

FOCUS

- Set it to AUTO to activate the automatic focusing in manual adjusting mode.
- Set this switch to MANUAL to focus manually.
- Press it down during manual focusing mode, automatic focusing is activated for the extension that the switch is pressed down (PUSH AUTO).

By setting the AUTO LOCK switch down, each parameter can be adjusted manually.

EXPOSURE

- Each press of this button switches between automatic and manual adjustment.
- 21 exposure values (F16/0 dB to F1.4/+18 dB) plus aperture close can be selected using the CONTROL dial in the manual mode.

SHUTTER SPEED

- Each press of this button switches the shutter speed as follows:
  1/60 (No indication) → 1/100
  └──── 1/1000 ←────┘
- 16 shutter speeds (1/60 to 1/10000) can be selected using the CONTROL dial in the manual mode.

WHT BAL

- Each press of this button switches the mode as follows:
  Automatic (no indication) → ⊡ (One-push adjustment)
  ↑ ↓
  ☼ (Indoors) ← ✹ (Outdoors)

⊡ (One-push white balance)

- When pressed during ⊡ mode, the white balance can be adjusted manually.

Programmed AE Modes

By setting the AUTO LOCK switch down, four programmed AE modes can be selected to match distinctive camera recording conditions.

Portrait mode
Use to focus on the subject and to have the background out of focus. The aperture and shutter speed is automatically adjusted to maintain the appropriate exposure according to the size and brightness of the subject.

Sports mode
Use to shoot subjects moving at high speeds and then play it back clearly in slow or still. The aperture and shutter speed is automatically adjusted to maintain the appropriate exposure according to the speed of the subject.

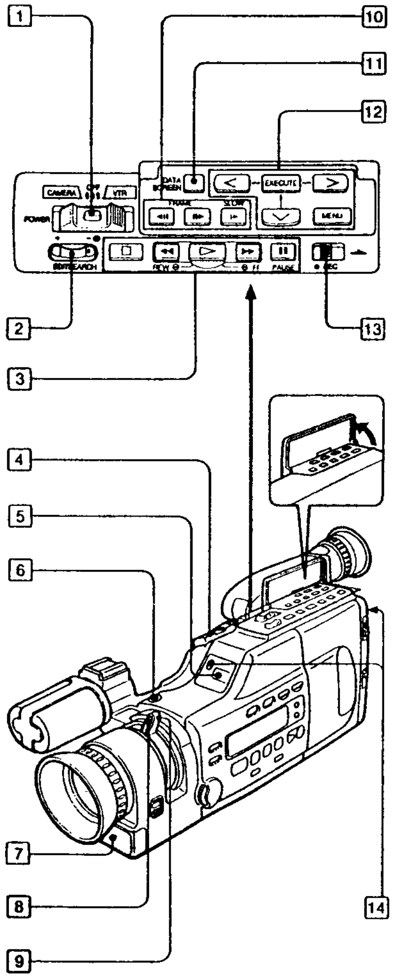
Aperture priority mode
Select the desired aperture (F1.4 to F16) with the CONTROL dial and the shutter speed will be automatically adjusted to maintain the appropriate exposure.

Shutter priority mode
Select the desired shutter speed (1/60 to 1/10000) with the CONTROL dial and the aperture will be automatically adjusted to maintain the appropriate exposure.

Manual Mode
The shutter speed is locked to the normal speed (1/60) and the exposure is adjusted automatically.
When you press the EXPOSURE and SHUTTER SPEED buttons in this mode, the exposure and shutter speed can be selected by using the CONTROL dial in the manual mode.

Note
Focus and white balance can either be adjusted automatically or manually during the programmed AE mode. The adjusting method is same as those in the "Manual Adjustment Mode."

(D-1)



(D-1)

For details of the use of each parts, refer to the pages indicated in ●.

1 POWER switch
CAMERA: for camera recording
VTR: for playing back or editing tapes
OFF: power off

2 EDITSEARCH (and recording review) buttons ㊳

3 Tape transport buttons ㊸, ㊺
□ (stop)
◀◀ REW (rewind)
▷ (playback)
▶▶ FF (fastforward)
❚❚ PAUSE

4 Power zoom button ㉝

5 Remote control sensor ⑲

6 REC (recording) START/STOP button for low position camera recording ㉛
Use this button instead of the START/STOP button for low-position recording.

7 AF (auto focus) sensor
Measures the distance from the camcorder to the object in the auto focusing funcion. Do not cover with your fingers, etc.

8 Macro set button (green) (62)

9 Zoom lever (61)

10 Tape transport buttons ㊺
❚▶ SLOW (slow speed playback)
< ◀❚❚/> ❚❚▶ FRAME (direction switch/frame-by-frame playback)

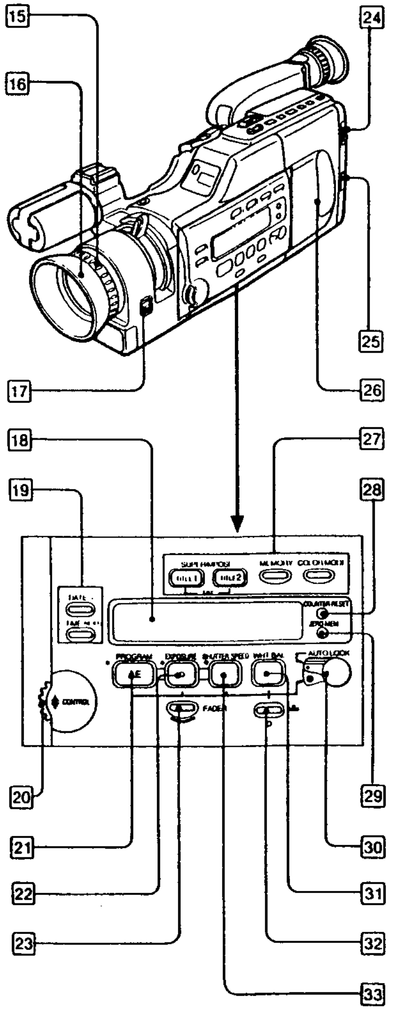
11 DATA SCREEN button ㊼

12 Menu operation buttons ㊴, (52)
MENU
EXECUTE
</>/ V

13 ● REC (recording) switch ⑱
Slide in the direction of the arrow.

14 Camera recording/battery lamps
Light during camera recording. Flashes when the battery is exhausted, or the tape reaches its end.

(D-2)



(D-2)

15 Focus ring

16 **Lens hood ●**

17 **FOCUS switch ●**

18 **Display window ●**

19 **DATE (+)/TIME (NEXT) buttons ●, ●**

20 **CONTROL dial ●**
Move up or down to select the desired parameters during programmed AE mode and manual adjustment mode.

21 **PROGRAM AE (programmed auto exposure) button ●**

22 **EXPOSURE button ●**

23 **FADER button ●**

24 **EJECT (cassette eject) button ●**

25 **BATT (battery eject) knob ●**

26 **Cassette holder**

27 **SUPERIMPOSE buttons ●**
TITLE 1 button
TITLE 2 button
MEMORY button
COLOR/MODE button

28 **COUNTER RESET button ●, ●, ●**

29 **ZERO MEM (memory) button ●, ●, ●**

30 **AUTO LOCK switch**
To adjust the aperture, gain, white balance automatically and the shutter speed locked to 1/60, set to AUTO LOCK.

31 **WHT BAL (white balance) button ●**

32 **(one-push white balance) button ●**

33 **SHUTTER SPEED button ●**

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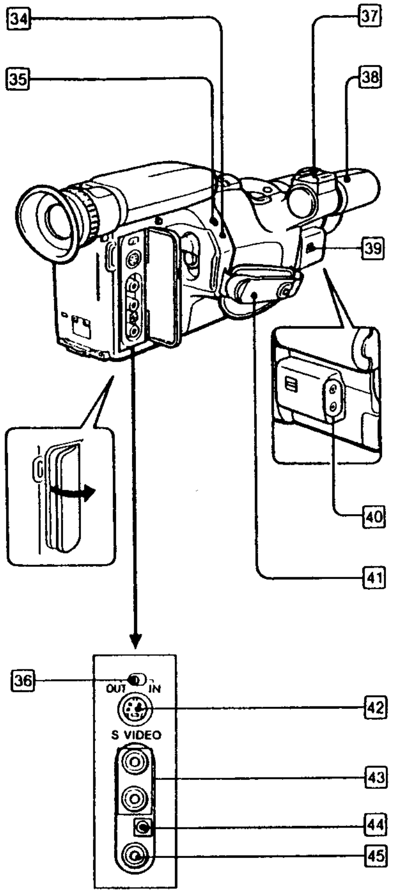
(D-3)



(D-3)

34 **∩ (headphones) jack (stereo mini jack)**

35 **REMOTE connector (stereo mini-minijack)**
Connect a wired remote control unit, a editing controller (not supplied), etc.

36 **IN/OUT (signal input/output) selector ●, ●, ●**

37 **Accessory shoe**
Attach a video light, external microphone, (not supplied), etc.

38 **Built-in one-point stereo microphone***

39 **BUILT-IN MIC (microphone)/WIND selector ●**

40 **EXT MIC and DC OUT (microphone power output) jack**
Connect an external microphone (not supplied). The DC OUT jack supplies power to it.
When connecting the "plug-in-power" microphones, use the MIC jack only.

41 **Grip strap ●**

42 **S VIDEO connector (4-pin mini DIN connector) ●, ●**

43 **AUDIO L/R input/output jacks (phono jacks) ●, ●, ●**

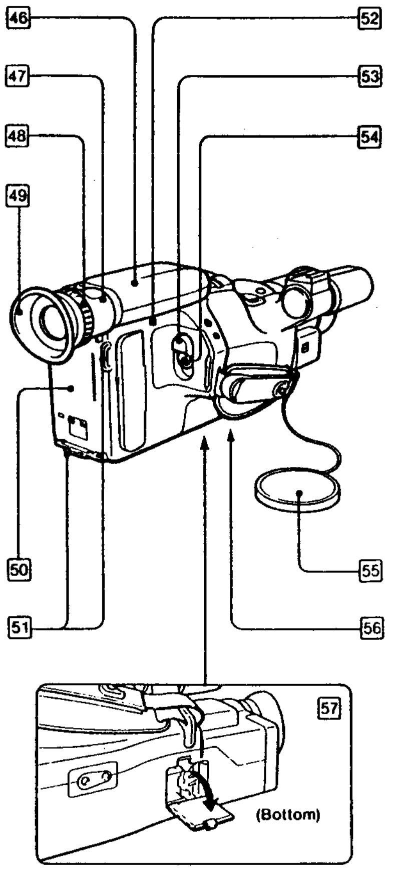
44 **RFU DC OUT (RFU adaptor DC output) jack (special minijack) ●**
Attach the supplied RFU adaptor here.

45 **VIDEO input/output jack (phono jack) ●, ●, ●**

About the (LANC) mark
(LANC) stands for Local Application Control Bus System. The (LANC) connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

Note on the microphone
The microphone is fixed to the camcorder. Do not turn the microphone or hold the camcorder by the microphone. This may damage the camcorder.

(D-4)



(D-4)

46 Viewfinder
The picture being recorded or played back can be monitored in black and white in here.
Caution indicators, tape operation modes, function modes, menu are also displayed.

47 Sports finder
As the focal length is long, you can monitor the picture while being away from the eyecup.

48 Viewfinder lens adjustment ring ●

49 Eyecup

50 Battery mounting surface ●

51 Hooks for shoulder strap

52 PUSH SLIDE button
Press this button and slide the viewfinder to the desired position.

53 STANDBY switch
Slide up to set the camcorder to the standby mode.

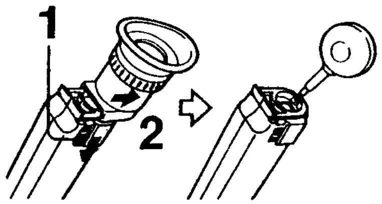
54 START/STOP button
Press to start and stop camera recording.

55 Lens cap

56 Tripod receptacle (bottom)

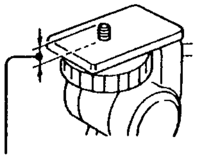
57 Lithium battery compartment (bottom) ●

(D-5)



To remove the dust from inside the viewfinder (D-5)
Detach the sports finder as illustrated and clean the surface of the screen with a blower.

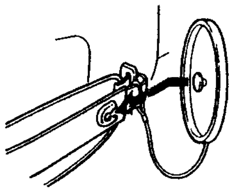
(D-6)



Less than 6.5 mm (9/32 inches)

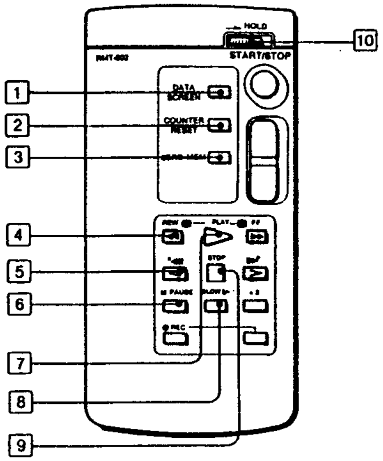
Note on attaching a tripod (D-6)
When attaching a tripod other than Sony's, make sure that the length of the camera mounting screw is less than 6.5 mm (9/32 inches). Otherwise, the screw may damage the inner parts of the camcorder.

(D-7)



When the lens cap is removed (D-7)
Attach the lens cap to the grip strap.

(D-8)


1
2
3
4
5
6
7
8
9
10
HOLD
START/STOP
DATA SCREEN
COUNTER RESET
ZERO MEM
REW
PLAY
FF
STOP
PAUSE
SLOW
REC

Wireless Remote Commander

(D-8)

You can record or play back a tape from a distance. The buttons on the Commander with the same name or mark as those on the camcorder have the same function.

When you use the Commander
Be sure to select "COMMANDER ON" in the MODE SET menu (page 37 and 50) and then start operating the camcorder. Point the Commander to the remote sensor on the camcorder.

1 DATA SCREEN button ●

2 COUNTER RESET button ●, ●, ◎

3 ZERO MEM button ●, ●, ◎

4 ◀◀ REW ⊜ (rewind) button ●

5 </◀II (reverse direction/reverse frame) button ●

6 II PAUSE button ●, ●

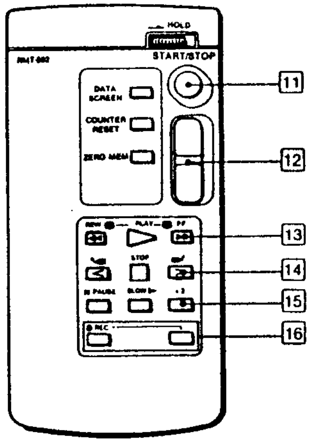
7 ▷ PLAY (playback) button ●, ●

8 SLOW I▶ button ●

9 □ STOP button ●

10 HOLD switch
Slide in the direction of the arrow to prevent the buttons from being accidentally depressed.

(D-9)


HOLD
START/STOP
DATA SCREEN
COUNTER RESET
ZERO MEM
11
12
13
14
15
16

(D-9)

11 START/STOP button
Press to start and stop camera recording.

12 Power zoom button ●

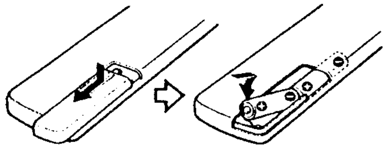
13 ▶▶ ⊜ FF (fast forward) button ●, ●

14 >/II▶ (forward direction/forward frame) button ●

15 X 2 button ●
Available on the Commander only.

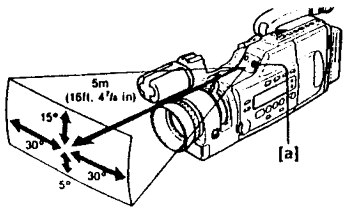
16 Recording buttons ◎
Press both buttons simultaneously when recording from another equipment.

(D-10)



Inserting batteries
(D-10)
Insert two size AA (R6) batteries with polarity positioned correctly.

(D-11)


5m
(16ft. 4⁷⁄₈ in)
15°
30°
5°
30°
[a]

Remotely controllable range
(D-11)
Point the Commander towards the remote sensor [a].

Notes on batteries
- The batteries will last for about six month under normal operation. However, if the Commander will not be used for a long period, remove the batteries to avoid possible damage from battery leakage.
- Do not let direct sunlight or strong light source light the camcorder's remote control sensor. Remote control with the Commander may not be effective.
- The command mode of the Commander is VTR 2. Avoid using Sony VCRs with the same command mode at the same time.

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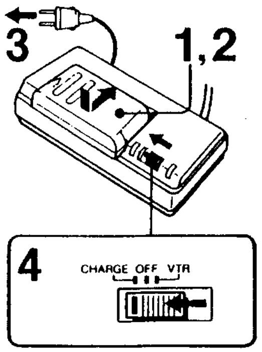
(E-1)



Connecting the Power Sources

First Choose the Power Source

Place	Power source	Accessory to be used
Outdoors	Battery pack	Battery pack NP-66H (supplied), NP-77H, NP-77, or NP-55
	Alkaline batteries	Battery case EBP-55
Indoors	House current	AC power adaptor AC-V35/ AC-V35A (supplied), AC-V30, or AC-V55
In the car	12 V or 24 V car battery	DC pack DCP-77, or AC power adaptor AC-V55 and car battery cord DCC-16AW

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If disconnected, supply the power again immediately.

Using the Battery Pack

Step 1
Charge the battery pack. (E-1)

1 **Align the groove on the battery pack with those on the AC power adaptor.**

2 **Slide in the battery pack to the right as illustrated.**

3 **Connect the AC power adaptor to a wall outlet.**

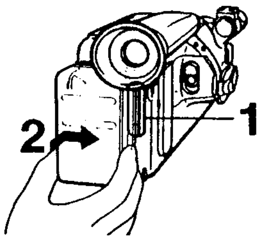
4 **Set the CHARGE/VTR selector to CHARGE.**

	NP-66H (supplied)	NP-55	NP-77	NP-77H
Required charging time	100	60	120	140

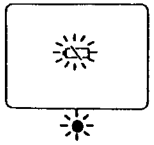
(approx. minutes using AC-V35/AC-V35A)

Refer to the operating instructions of the AC power adaptor for details.

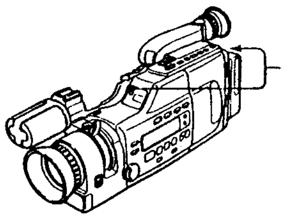
(E-2)



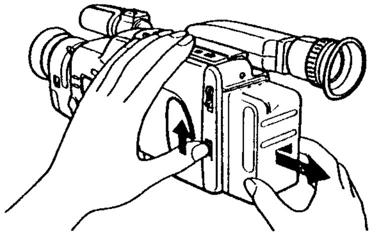
(E-3)



(E-4)



(E-5)



Step 2
Mount the battery pack on the camcorder. (E-2)

1 **Align the right side of the battery pack with the line on the camcorder.**

2 **Slide in the battery pack to the right as illustrated.**

Note
Make sure that the battery fits completely on the mounting surface of the camcorder.
Imperfect mounting may damage the projections of the camcorder.

Battery life
A fully charged battery pack lasts for:

	NP-66H (supplied)	NP-55	NP-77	NP-77H
Battery life	75	40	80	100

(approx. minutes continuous recording when used indoors)

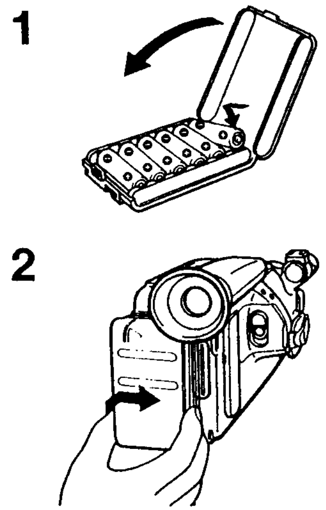
When the battery becomes weak, the ⌧ indication and the red lamp in the viewfinder **(E-3)** and the camera recording/battery lamp **(E-4)** blinks. Replace the battery pack with a fully charged one.

To remove the battery pack
(E-5)
Hold the BATT knob up, and slide the battery pack to the left.

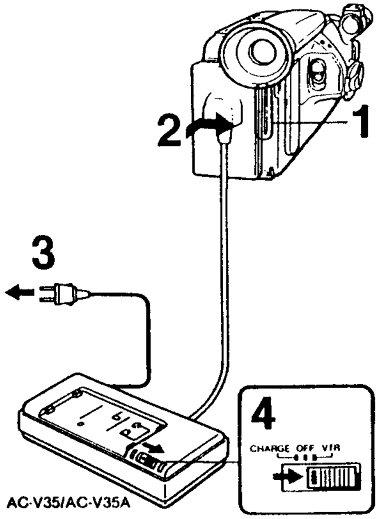
Other options
- AC-V55 AC power adaptor:
  You can charge two battery packs.
- BC-55, BC-77 portable battery charger:
  You can charge a battery pack on 100 – 240 V AC.
- DC-V30 car battery pack:
  You can charge a battery pack by connecting the car battery charger to the cigarette lighter socket.

If you have an NP-4000
You can use it for long outdoor recording.

(E-6)



(E-7)



Using Alkaline Batteries

(E-6)

The EBP-55 battery case (not supplied) is required.

1 **Insert size AA (R6) alkaline batteries into the battery case.**
You cannot use the manganese batteries.

2 **Attach the battery case in the same way as the battery pack.**

Battery life
Approximately 40 minutes under continuous recording indoors.

To remove the battery case
Proceed in the same way as the battery pack.

Notes on battery life while using the battery case
- Batteries do not last long in cold places.
- No indication appears in the viewfinder to warn of a weak battery.

Using the House Current

(E-7)

The supplied AC-V35/AC-V35A AC power adaptor is required.

1 **Align the right side of the connecting plate with the line on the camcorder.**

2 **Slide in the connecting plate to the right.**

3 **Connect the AC power adaptor to a wall outlet.**

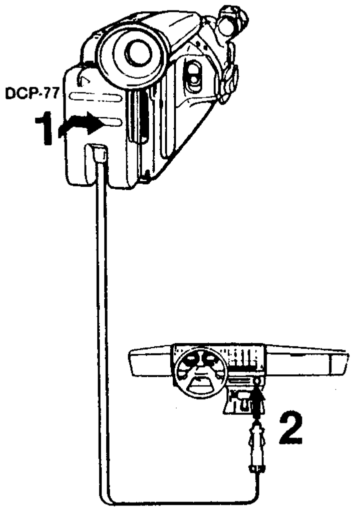
4 **Set the CHARGE/VTR selector on the AC power adaptor to VTR.**

See the operating instruction of the AC power adaptor for further information.

To remove the connecting plate
Proceed in the same way as the battery pack.

Other power sources
The AC-V30 or AC-V55 AC power adaptor can also be used.

(E-8)



Using the Car Battery

(E-8)

The DCP-77 DC pack (not supplied) is required.

1 **Align the right side of the DC pack with the line on the camcorder and slide it to the right.**

2 **Connect the car battery cord to the cigarette lighter socket of a car (12 V or 24 V).**

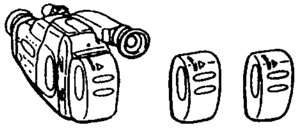
To remove the DC pack
Proceed in the same way as the battery pack.

Other options
The AC-V55 AC power adaptor and the DCC-16AW car battery cord can also be used to operate this camcorder on a 12 V or 24 V car battery.

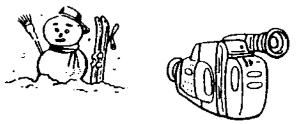
Using the Best of the Battery Pack

How to prepare the rechargeable battery packs

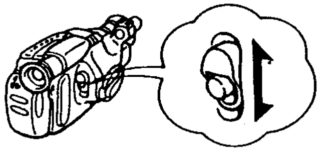
Have a sufficient battery pack power to perform 2 or 3 times as much recording than you have planned.
"Battery life" as indicated in the instruction manual or catalogue of the camcorder is measured by the continuous recording time of the camcorder, placed at a room temperature using a full-charged battery.



Battery life is shorter in a cold climate.
Battery efficiency is decreased and the battery will be used up more quickly.



Turn the STANDBY switch of the camcorder off when not recording to save battery power.
A smooth recording can be made even if recording is stopped and started again.
While positioning the subject, selecting an angle, or looking through the viewfinder, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



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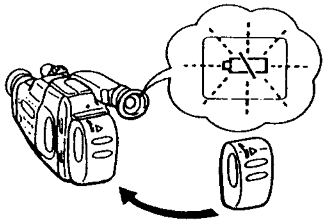
When the rechargeable battery pack should be replaced

When the 🔋 mark in the viewfinder changes from slow blinking to rapid blinking while you are recording.
Turn off the power switch of the camcorder and replace the battery pack. Leave the tape in the camcorder in order to obtain a smooth recording after the battery pack is replaced.

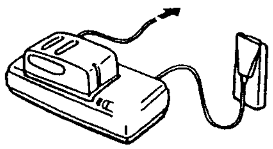


Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.

Recharge the battery pack when it is exhausted.

- If recording is completed before the 🔋 mark appears in the viewfinder, it is recommended that you remove the tape, set POWER to CAMERA, slide up STANDBY, and leave the camcorder until the 🔋 mark blinks rapidly.
- **Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery pack again.**



Recharge the battery pack before using.
If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged.
Charge it again but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

Keep the terminals clean

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, install and remove the battery pack from time to time. This will improve the contact condition. Also wipe the + and – terminals with a soft cloth or paper.

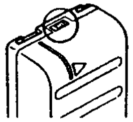
Notes on the rechargeable battery pack

Why the battery pack heats up
During charging or recording, the battery pack heats up. This means energy has been generated and a chemical change has occurred inside the battery pack, but this is not dangerous.

How to care for the battery pack

- Remove the battery pack from the camcorder after using it, and keep it in a cool place.
  When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is turned off. It causes overdischarging and will shorten battery life.
- The battery pack is always discharging even when it is not in use after charging. Thus, it is recommended you charge the battery before using.

How to use the switch on the battery pack
This switch is provided so that you can remember the charging condition. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up.

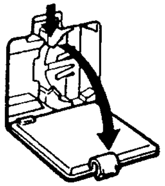


How many times can the battery pack be recharged
It can be fully charged and discharged about 500 times under normal temperatures. If the 🔋 mark blinks rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

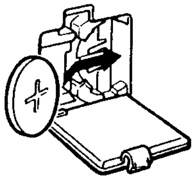
Temperature during charging
Lower temperature require a longer charging time. Charging under temperatures ranging from 10°C to 30°C (50°F to 86°F) is recommended.

(F-1)

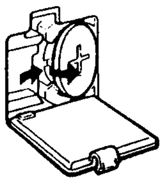
1



2



(F-2)



Setting the Date and Time

Inserting the Lithium Battery

(F-1)

This camcorder uses a lithium battery to activate the clock and to keep the titles in the memory.
Install the supplied lithium battery before operating it for the first time.

1 **Open the cover of the lithium battery compartment on the bottom.**

2 **Install the supplied CR2025 lithium battery with the ⊕ side facing out.**

3 **Close the cover.**

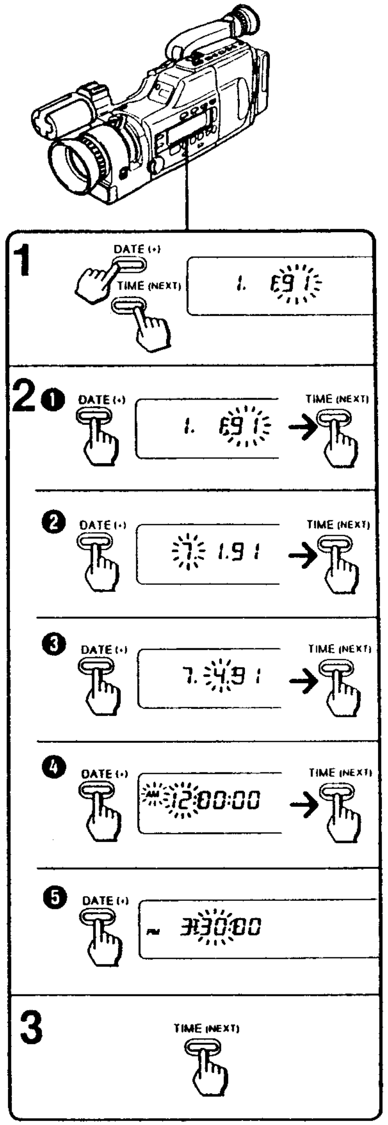
To remove the lithium battery (F-2)
Press the side of the battery in the direction as indicated for installation.

Note on lithium battery life
The lithium battery lasts for approximately 1 year under normal operation. When the lithium battery becomes weak, the time indication keeps blinking in the display window and blinks in the viewfinder for about 5 seconds when the POWER switch is set to CAMERA. **In this case, keeping the battery pack or another power source connected, replace the lithium battery with a Sony CR2025 or a Duracell DL-2025. Use of other lithium batteries may present a risk of fire or explosion.** If the battery pack or other power sources were not attached during the lithium battery replacement, readjust the date and time after installing a new lithium battery.

Cautions
- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- **Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.**

WARNING
Battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

(F-3)



Setting the Date and Time

(F-3)

Before you begin
- Check that a power source is installed to the camcorder.
- Set the POWER switch to CAMERA and slide the STANDBY switch up.

Operation

1 **Press DATE (+) and TIME (NEXT) simultaneously for more than 2 seconds.**
The date indication blinks in the display window. The DATE button now functions as + (advance the number) and the TIME button functions as NEXT (execute). If you went passed the desired number, keep pressing the + button. The number eventually returns to the original one.

2 **Adjust the year ❶, month ❷, day ❸, hour ❹, and minute ❺ in this order.**
First, adjust the blinking digits with +, and then press NEXT.

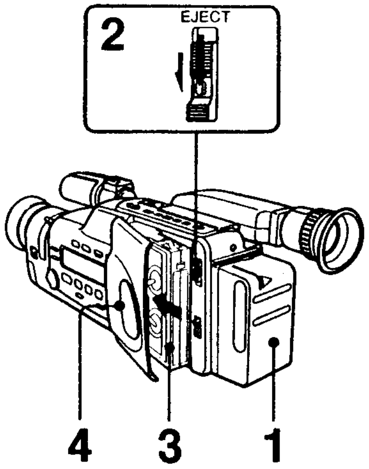
3 **Press NEXT to set the seconds to "00".**
The clock starts operating.

To correct date and time setting
Repeat steps 2 and 3.

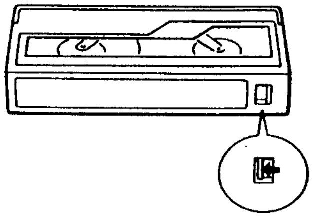
To advance the digits faster
Keep pressing +.

To check the preset date and time
Press DATE or TIME. When you press the same button again, the indication is changed to the counter indication.

(G-1)



(G-2)



Inserting Tapes

(G-1)

1 **Check that a power source is installed.**

2 **Press and slide the EJECT button.**
The cassette holder automatically opens.
Do not open it forcibly while it is moving.

3 **Insert a cassette with the window facing outside.**

4 **Press the PUSH mark to close the cassette holder.**

Ejecting the Tape

1 **Check that a power source is installed.**

2 **Press and slide the EJECT button.**
The cassette holder automatically opens.

3 **Take out the tape.**

4 **Press the PUSH mark to close the cassette holder.**

Preventing Accidental Erasure

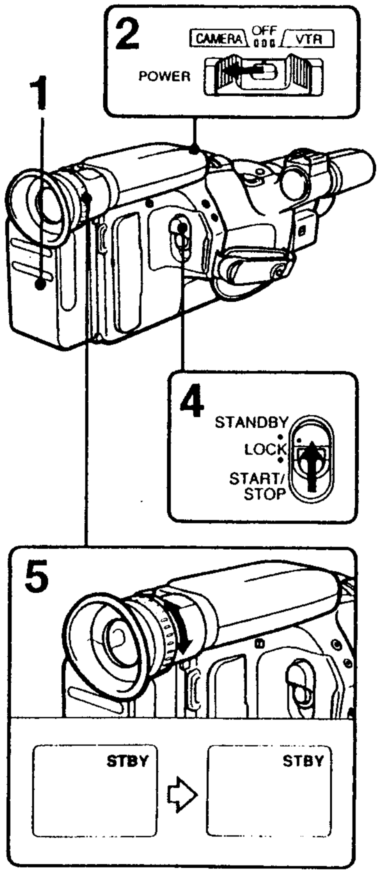
(G-2)

Slide out the red tab on the cassette to prevent recording. To re-record on the same tape, slide the tab in.

Notes on cassette handling

- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape, or if the tab is out or in, etc.
- Store tapes in their cases and keep them away from heat, humidity, direct sunlight, magnetic fields, dust and mold.

(H)



Adjusting the Viewfinder Lens

(H)

The position of the viewfinder lens for optimum vision varies depending upon the person. Adjust it when using the camcorder for the first time, or when using it after someone else.

1 **Check that a power source is installed.**

2 **Hold down the green button and slide the POWER switch to CAMERA.**

3 **Insert a cassette.**

4 **Slide the STANDBY switch up.**

5 **Turn the viewfinder lens adjustment ring so that the "STBY" indication in the viewfinder comes into focus.**

When the viewfinder touches your nose
Press the PUSH SLIDE button and slide the viewfinder to the desired position.

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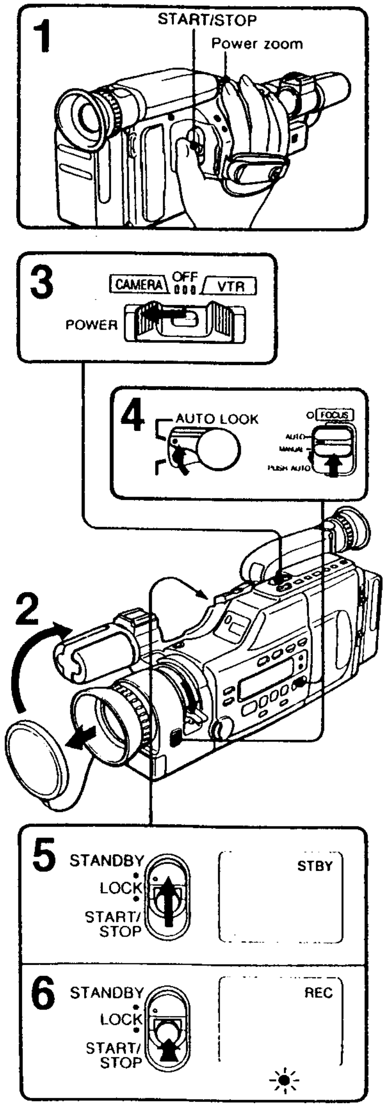
Recording a Picture with the Automatic Adjustments

(I-1)



(I-1)

Before recording "once-only" events, we strongly recommend making a trial recording and checking that everything is working perfectly.

1 **Hold the camcorder as illustrated.**
Put your hand through the grip strap and check that your thumb easily touches the START/STOP button.
Do not cover the AF sensor under the lens with your fingers, etc.

2 **Remove the lens cap and attach it to the grip belt.**

3 **Hold down the green button and slide the POWER switch to CAMERA.**

4 **Set the AUTO LOCK switch to AUTO LOCK, the FOCUS switch to AUTO and turn the zoom lever downwards.**

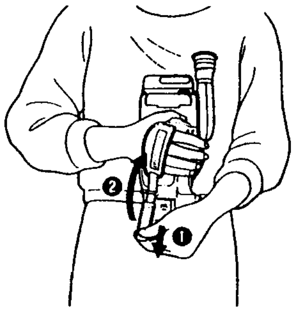
5 **Slide the STANDBY switch up until it clicks.**
"STBY" appears in the viewfinder. The camcorder is now set to the recording standby mode. The camcorder adjusts the focus automatically. Do not turn or stop the focus ring forcibly.

6 **Press the START/STOP button.**
"REC" appears and the red lamp lights in the viewfinder. The camcorder is recording.

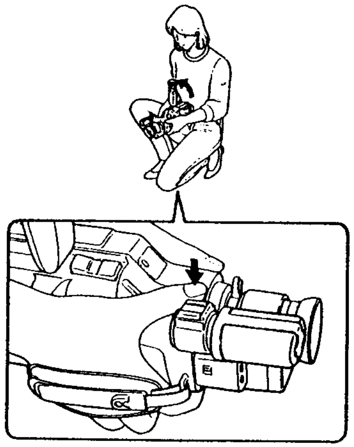
To stop recording momentarily
Press the START/STOP button again. The camcorder enters the standby mode with "STBY" indication in the viewfinder.

To stop recording
Slide the STANDBY switch down and set the POWER switch OFF.

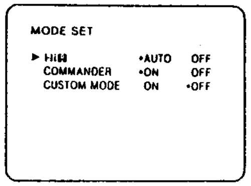
(I-2)



(I-3)



(I-4)



```
MODE SET

▶ Hi8            •AUTO    OFF
  COMMANDER      •ON      OFF
  CUSTOM MODE     ON     •OFF
```

How to fix the grip strap
(I-2)
In step 1 on the previous page, ❶ hold the camcorder pressed to your body and ❷ pull the grip strap upwards.

For low-position shooting
(I-3)
The viewfinder can be turned up 90 degrees. Press the REC START/STOP button in the front of the camcorder instead of the START/STOP button to start and stop the camera recording.

How to record in the Hi8 mode
(I-4)
The camcorder is set to record in the AUTO mode which automatically records in the Hi8 mode when a Hi8 tape is used. To record in the standard mode with the Hi8 tape change the setting in the menu.
See "Using the Menu for Camera Recording" on page 37. On the playback compatibility of Hi8 tape and standard tape refer to page 7.

Notes on recording
- To record from the beginning of the cassette, run the tape for about 15 seconds before recording. This will avoid missing the starting point when the tape is played back.
- If the POWER switch is moved during recording, the tape will stop.
- When moving from indoors to outdoors, or vice versa, slide the STANDBY switch up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

Note on standby mode
If you leave the camcorder in the standby mode for 5 minutes or more, the camcorder will automatically be turned off. To resume the standby mode, slide the STANDBY switch down once and slide it up again. To start recording, press the START/STOP button.

Notes on light sources
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.
- If you shoot an object under bright lighting conditions just after shooting in a dark place, the picture may not appear in the viewfinder. In this case, point the camcorder to another direction.

Brightness Levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

	Unit: lux	
Snow-covered mountains Snow fields Sandy beach, clear day in summer		ND filter recom-mended
Clear day, mid-day (100,000)	100,000	Normal Recording
Clear day, mid-afternoon (35,000)		
Overcast day, mid-day (32,000)		
	10,000	
Overcast day, one hour after sunrise (2,000)		
Office lit by fluorescent lamps, near window (1,000)	1,000	
Clear day, one hour before sunset (1,000)		
Department store counter (500 – 700)		
Station wicket (650)	500	
Office lit by fluorescent lamps (400 – 500)		
Room lit by two 30 W fluorescent lamps (300)	300	
Subway station platform (300)		
Arcade at night (150 – 200)	100	
Theater lobby (15 – 35)		Video light recom-mended
Candlelight (10 – 15)		
	10	

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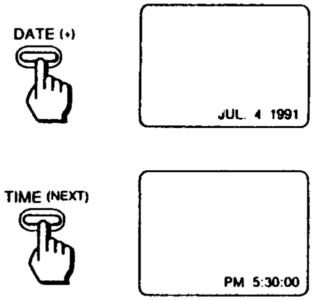
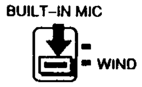
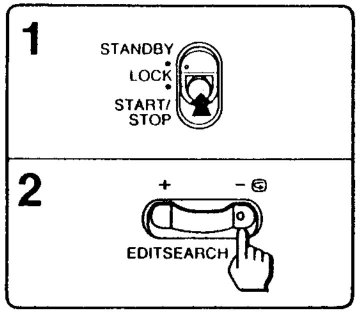
(I-5)



(I-6)



(I-7)



To Record Date and Time

(I-5)

1 **Set the camcorder in the camera recording standby or camera recording mode.**

2 **Press the DATE button to indicate the date and TIME button to indicate the time.**
The date or time displayed in the viewfinder will be recorded together with the picture.

To stop recording date or time
Press the DATE or TIME button. The indication is cleared and the recording continues.

When there is Strong Wind

(I-6)

Set the BUILT-IN MIC selector to WIND.
The noise resulting from the wind will be reduced.
After recording, set it to the upper (green) position.

To Check the Last Portion of the Recording

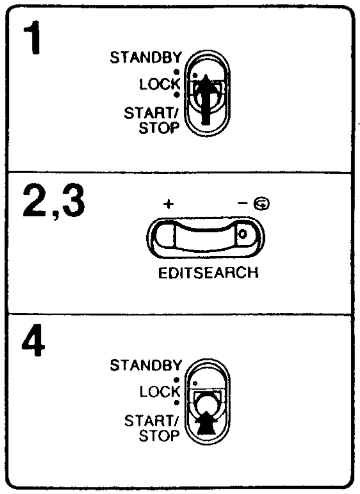
(I-7)

1 **Set the camcorder in the recording pause mode by pressing the START/STOP button.**

2 **Press the ⊖ side of the EDITSEARCH button.**
The last few seconds of the recorded portion is rewound and then is played back in the viewfinder. After a few seconds of playback, the camcorder returns to the recording pause mode.

If the picture was not recorded
The video heads may be contaminated. Clean the heads using the Sony V8-25CLH video head cleaning cassette or the equivalent.

(I-8)


1
STANDBY
LOCK
START/
STOP
2,3
+
–
EDITSEARCH
4
STANDBY
LOCK
START/
STOP

To Re-record on a previously Recorded Portion

(I-8)

1 **Slide the STANDBY switch up.**
The camcorder enters the standby mode.

2 **Look in the viewfinder and search for the point from where you want to begin the recording.**
Keep pressing the + side of the EDITSEARCH button to advance the picture at a normal playback speed or the – side to reverse the picture.

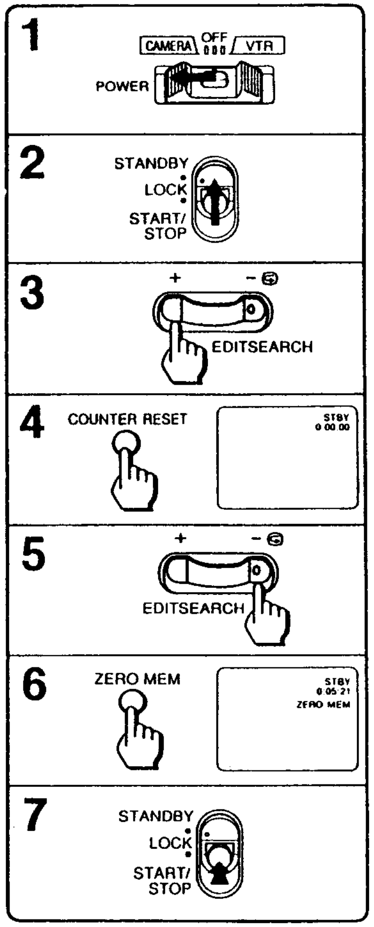
3 **At the desired point, release the EDITSEARCH button.**

4 **Press the START/STOP button to start recording.**

As long as the tape is not removed, the re-recorded picture will be smoothly connected even if the STANDBY switch is slid down and slid up again, or the power is turned off and on.

To stop recording
Slide the STANDBY switch down.

(I-9)


1
CAMERA
OFF
VTR
POWER
2
STANDBY
LOCK
START/
STOP
3
+
–
EDITSEARCH
4
COUNTER RESET
STBY
0 00 00
5
+
–
EDITSEARCH
6
ZERO MEM
STBY
0 05 21
ZERO MEM
7
STANDBY
LOCK
START/
STOP

To Re-record a Picure in the Middle of a Recorded Tape (Insert Recording)

(I-9)

1 **Hold down the green button and slide the POWER switch to CAMERA.**

2 **Slide the STANDBY switch up.**
The camcorder enters the recording standby mode.

3 **While looking in the viewfinder, keep pressing the + or – side of the EDITSEARCH button and release it at the point where the insertion should end.**

4 **Press the COUNTER RESET button.**
The counter is reset to "0:00:00".

5 **While looking in the viewfinder, keep pressing the – side of the EDITSEARCH button and release the button at the point where the insertion should start.**

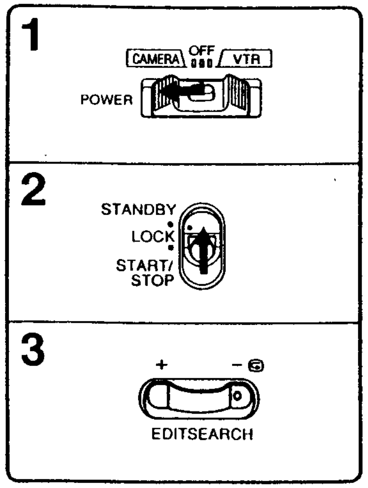
6 **Press the ZERO MEM buttton.**
The insert end point is stored in the memory.

7 **Press the START/STOP button.**
Insert recording starts. It stops automatically around the counter zero point.

To change the end point of the edit
Press the ZERO MEM button so that the ZERO MEM indication disappears. Start from step 3.

Note
The picture may be distorted at the end of the inserted portion when it is played back.

(I-10)



Playing Back the Picture Instantly

(I-10)

You can check the recorded picture in the viewfinder. The sound is not heard.

1 Hold down the green button and slide the POWER switch to CAMERA.

2 Slide the STANDBY switch up.

3 Keep pressing the + or – side of the EDITSEARCH button to playback the picture.
+ side: To view the playback picture.
– side: To view the playback picture in reverse.

To stop playback
Release the EDITSEARCH button.

To monitor the sound while viewing the playback picture in the viewfinder
1 Connect the headphones to the ∩ jack.
2 Hold down the green button and slide the POWER switch to VTR.
3 Press ◀◀ to rewind the tape and press □ where you want to start playing back.
4 Press ▷ to start playback.

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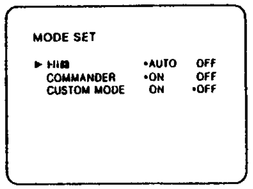
Using the Menu for Camera Recording

MODE SET menu, CUSTOM PRESET menu, and DEMONSTRATION menu can be used during camera recording. In the MODE SET menu, various settings to further enjoy the features of the camcorder can be selected. In the CUSTOM PRESET menu, the camcorder can be set to record in the desired picture tone. In the DEMONSTRATION menu, the camcorder displays the various indications and the operations available.

(J-1)


MODE SET
▶ Hi8 •AUTO OFF
COMMANDER •ON OFF
CUSTOM MODE ON •OFF

MODE SET Menu

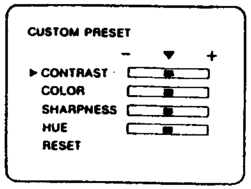
(J-1)

Hi8 AUTO/OFF
- Select AUTO to set the recording mode (Hi8 or normal) automatically depending upon the tape being used.
- Select OFF if you wish to record in the normal mode regardless of the type of tape being used.

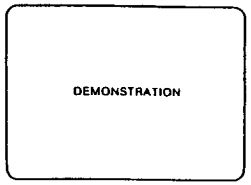
COMMANDER ON/OFF
- Select ON when using the supplied Commander for camera recording.
- Select OFF when the supplied Commander will not be used for camera recording.

CUSTOM MODE ON/OFF
- Select ON to perform camera recording based on the setting made in the CUSTOM PRESET menu. See page 98.
- Select OFF to perform camera recording without the setting made in the CUSTOM PRESET menu.

(J-2)



(J-3)



CUSTOM PRESET Menu

(J-2)

The camera can be preset to record in the desired picture using the CUSTOM PRESET menu. The items that can be preset are CONTRAST, COLOR, SHARPNESS, and HUE. See "Custom Preset Function" on page 98 for details.

DEMONSTRATION Menu

(J-3)

The camcorder will automatically demonstrate the manual modes, programmed AE modes, title modes, MODE SET menu for camera recording, and the CUSTOM PRESET menu. The sequence can be monitored in the viewfinder or on a TV screen if connected.

Operation

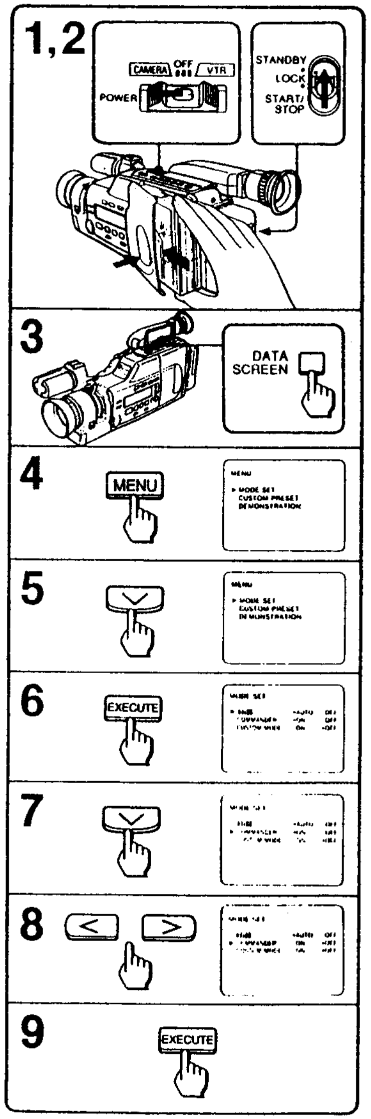
1 **Store 2 titles in the memory referring to pages 64 to 67.**

2 **To monitor the sequence on the TV screen, connect the camcorder and the TV referring to pages 40 to 43 and press DATA SCREEN.**

3 **Call up the MENU display and select DEMONSTRATION referring to page 39.**

4 **To get out of the DEMONSTRATION menu, press <, >, or ∨ .**
To return to the MENU display, press MENU.

(J-4)



How to Call Up the Menu Display

(J-4)

Example: To select COMMANDER OFF.

1 **Set the POWER switch to CAMERA and insert a cassette.**

2 **Slide the STANDBY switch up.**

3 **Press the DATA SCREEN button to display the menu on the TV screen.**

4 **Press the MENU button.**
The MENU display appears.

5 **Press ∨ and move cursor to the desired item.**

6 **Press the EXECUTE button.**
The selected menu appears.

7 **Press ∨ and move cursor to the desired item.**

8 **Press < or > to select the desired setting.**

9 **Press the EXECUTE button.**
The setting is stored in the camcorder and the menu display is cleared from the viewfinder.

The setting is stored in the memory even if the POWER switch is set to OFF or the battery pack is removed, as long as the lithium battery is installed.

To display another menu
Start from step 1 in "How to Call Up the Menu Display."

To return to the original screen
Press the MENU button.

To make multiple settings within one menu
After step 7 in "How to Call Up the Menu Display", press and move cursor to the desired item.

To clear the indication
Press the DATA SCREEN button again.

Connections for Playback

To view the playback picture on the TV screen, the camcorder and TV and/or the VCR must be connected properly. Check the following connecting examples and go to the appropriate section to make the connections required.

Case 1: Connecting the camcorder to a TV with video/audio input jacks.
Case 2: Connecting the camcorder to a TV without video/audio input jacks.
Case 3: Connecting the camcorder to a TV via a VCR that has an input selector.
Case 4: Connecting the camcorder to a TV via a VCR that does not have an input selector.

Case 1: Connecting to a TV with Video/Audio Input Jacks

(K-1)

1 Connect the camcorder and the TV using the supplied AV connecting cable.

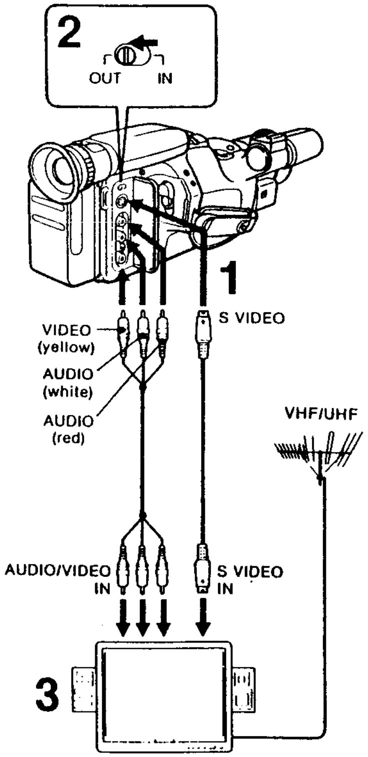
- If your TV has an S video input jack, connect the S VIDEO jack on the camcorder and the S video input jack on the TV using the supplied S VIDEO connecting cable.
- If your TV is a monaural type, connect only the white plug for audio on the TV.

2 Set the IN/OUT selector on the camcorder to OUT.

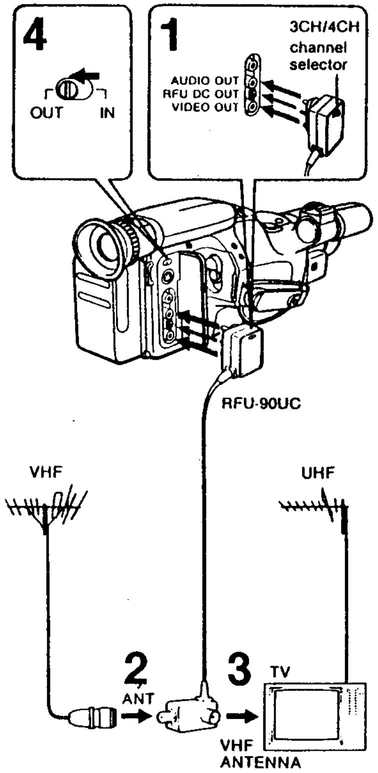
3 Set the TV/VIDEO selector on the TV to VIDEO.

Note
For details on the TV, refer to the operating instructions of the TV.

(K-1)



(K-2)



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Case 2: Connecting to a TV without Video/Audio Input Jacks

(K-2)

Step 1
Connecting the camcorder, the RFU adaptor (RFU-90UC, supplied), and the TV.

1 Connect the RFU-90UC to the camcorder.

2 Connect the VHF antenna and the RFU-90UC.

3 Connect the RFU-90UC to the TV.

4 Set the IN/OUT selector on the camcorder to OUT.

Step 2
Selection of the TV channel to monitor the camcorder playback.

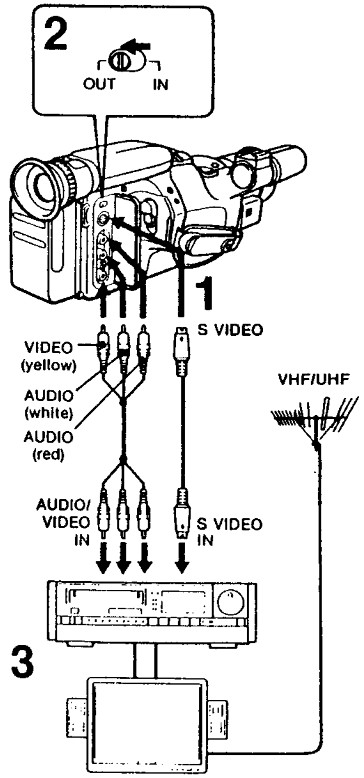
1 Set the RF unit selector on the RFU-90UC to either channel 3 or 4, whichever is not active in your area.

2 Select the same channel on the TV.

Step 3
Whenever playing back a tape, be sure to set the TV to the channel that you have selected in step 2.

Notes
- In this connection, the sound will be in monaural.
- When you watch a TV program, turn off the camcorder or disconnect the RFU adaptor from the camcorder.

(K-3)


2
OUT IN
1
VIDEO (yellow)
AUDIO (white)
AUDIO (red)
S VIDEO
VHF/UHF
AUDIO/ VIDEO IN
S VIDEO IN
3

Case 3: Connecting to a TV via a VCR with an Input Selector

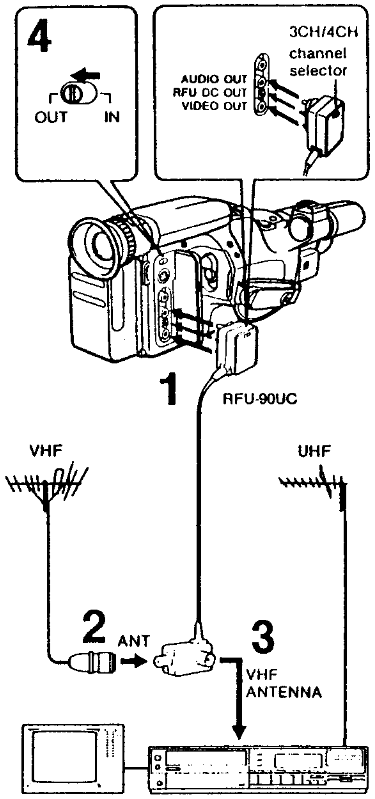
(K-3)

1 **Connect the camcorder to the VCR using the supplied AV connecting cable.**
- If your VCR has an S video input jack, connect the S VIDEO jack on the camcorder and the S video input jack on the VCR using the supplied S VIDEO connecting cable.
- If your TV is a monaural type, connect only the white plug for audio on the TV.

2 **Set the IN/OUT selector on the camcorder to OUT.**

3 **Set the input selector on the VCR to LINE and set the TV/VIDEO selector on the TV to VIDEO.**

(K-4)


4
OUT IN
3CH/4CH channel selector
AUDIO OUT
RFU DC OUT
VIDEO OUT
1
RFU-90UC
VHF
UHF
2
ANT
3
VHF ANTENNA

Case 4: Connecting to a TV via a VCR without an Input Selector

(K-4)

Step 1
Connecting the camcorder, the RFU adaptor (RFU-90UC, supplied), and the VCR.

1 **Connect the RFU-90UC to the camcorder.**

2 **Connect the VHF antenna and the RFU-90UC.**

3 **Connect the RFU-90UC to the VCR.**

4 **Set the IN/OUT selector on the camcorder to OUT.**

Step 2
Selection of the channel to monitor the camcorder playback.

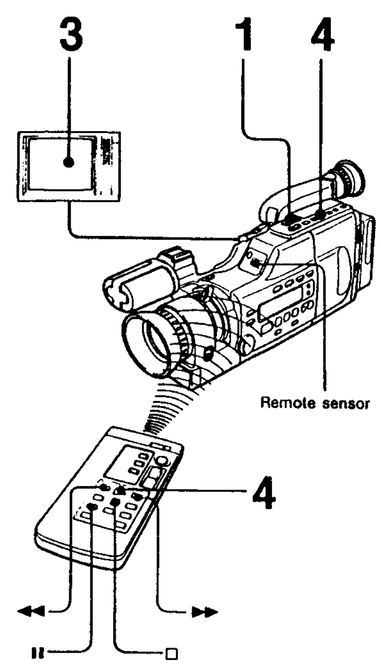
1 **Set the RF unit selector on the RFU-90UC to either channel 3 or 4, whichever is not active in your area.**

2 **Select the same channel on the VCR.**

Step 3
Whenever playing back a tape, be sure to set the VCR to the same channel that you have selected in step 2.

Notes
- In this connection, the sound will be in monaural.
- When you watch a TV program, turn off the camcorder or disconnect the RFU adaptor from the camcorder.

(L-1)



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Playing Back a Tape

Use the buttons on the camcorder as well as the buttons on the Commander. The Commander is useful when operating the camcorder from a distance. Be sure to select COMMANDER ON in the menu before operation. (See page 50.)

- When you use an optional wired remote commander, set to COMMANDER OFF.
- When you use the AC power adaptor, set the CHARGE/VTR selector to VTR.

(L-1)

1 **Hold down the green button and slide the POWER switch to VTR.**

2 **Insert a cassette.**

3 **Turn on the TV.**
- For a TV with video/audio input jacks: Set the TV/VIDEO selector to VIDEO.
- For a TV without video/audio input jacks: Select the channel for playing back the camcorder.

4 **Press ▷.**
Playback starts.
The ▷ on the camcorder can also be used.

To view a still picture
Press II during playback.

To resume playback
Press ▷ or II again.

To stop playback
Press □.

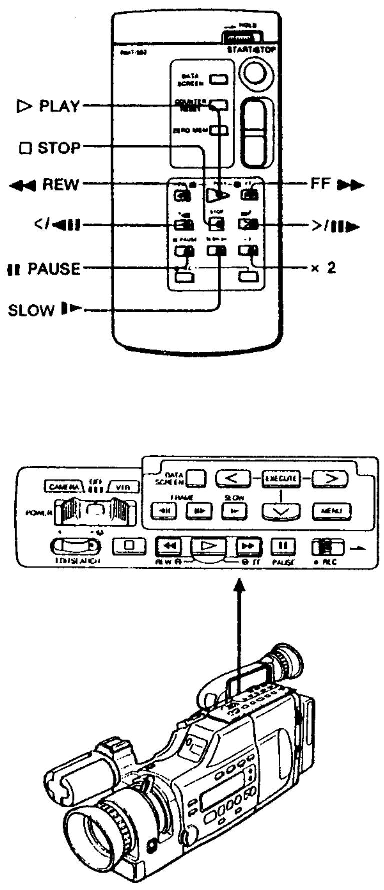
To rewind the tape
Press □ and then ◀◀.

To advance the tape rapidly
Press □ and then ▶▶.

After playback
Set the POWER switch on the camcorder and the CHARGE/VTR selector on the AC power adaptor to OFF.

Notes
- When the still picture lasts for 5 minutes or more, the camcorder automatically enters the stop mode.
- This camcorder plays back a tape recorded in the SP and LP modes. The playback mode is automatically switched depending upon the mode of the recorded tape inserted.

(L-2)



Various Playback Modes

(L-2)

To view a still picture (playback pause)
Press II during playback.
II◀ or ▶II appears in the viewfinder.
To resume normal playback, press ▷ or II.

To change the playback direction
Press </◀II for the reverse or >/II▶ for the forward direction during playback.
– × 1 or × 1 appears in the viewfinder.
To resume normal playback, press ▷.

To view the picture at 1/5 speed (slow playback)
Set the playback direction with </◀II or >/II▶, and then press I▶ during playback.
◀I or I▶ appears in the viewfinder.
When slow playback lasts for 1 minute or more, forward or reverse playback at normal speed starts automatically, according to the tape direction.
To resume normal playback, press ▷.

To view the picture at double speed (Commander only)
Set the playback direction with </◀II or >/II▶, and then press × 2 on the Commander.
– × 2 or × 2 appears in the viewfinder.
To resume normal playback, press ▷.

To view the picture frame-by-frame
Press </◀II or >/II▶ in the still picture mode. Each press of the button moves the picture one frame. ◀II or II▶ appears in the viewfinder momentarily. If you keep pressing </◀II or >/II▶, playback at 1/30 speed starts.
To resume normal playback, press ▷.

To locate the desired scene — Picture search
Keep pressing ◀◀ or ▶▶ during playback or the still picture mode. ⏪ or ⏩ appears in the viewfinder.
To resume normal playback, release the button.

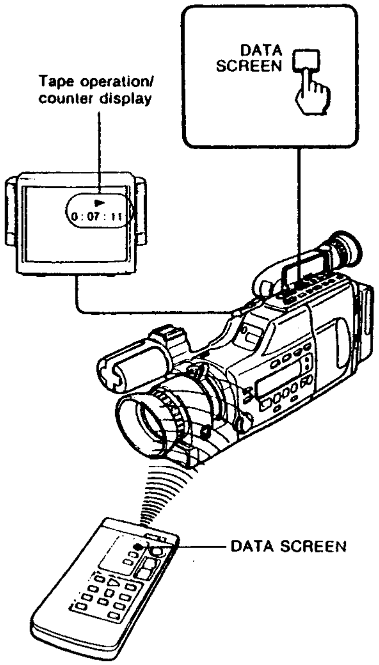
To locate the desired scene quickly — Skip scan
Press ◀◀ while rewinding or ▶▶ while advancing the tape rapidly. ⏪ or ⏩ appears in the viewfinder.
To resume normal playback, press ▷.

Notes during the above playback

- Sound is heard only in the double speed forward playback.
  - The sound has noise.
  - With a stereo tape, the sound is heard in monaural.
  - With a dual sound recorded tape, the main sound is heard.
- Noise may appear in the still picture.
- Streaks may appear when pressing the ◀◀ or ▶▶.
- Streaks may appear when playing back a tape recorded in the LP mode in the still, frame-by-frame, or slow.
- The color of the picture may change during still, frame-by-frame, slow or when using the ◀◀ or ▶▶ button.

If picture is noisy during frame-by-frame or slow playback
Adjust the picture referring to "PICTURE ADJUST menu" (page 51) while playing back the tape in slow speed.
The noise may not be eliminated if the tape was recorded on another VCR.

(L-3)



Displaying the Information in the Viewfinder onto the TV Screen

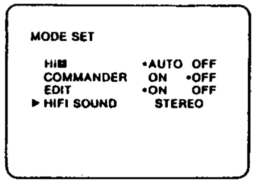
(L-3)

Connect the camcorder and the TV properly and press the DATA SCREEN button.
The indication in the viewfinder is superimposed on the TV screen. This function is convenient to monitor the indications in the viewfinder during menu operations or when the camcorder is remotely operated by the Commander.

To clear the indication
Press the DATA SCREEN button again.

Note
When using the camcorder as a playback VCR during editing, be sure to clear the indications from the TV screen. Otherwise, the indications will be recorded with the picture.

(L-4)



MODE SET

HI▮ •AUTO OFF
COMMANDER ON •OFF
EDIT •ON OFF
▶ HIFI SOUND STEREO

Selecting the Monitor Sound

(L-4)

The playback sound can be selected by the menu.
Refer to "Using the Menu for Playback or Editing" (page 50) for details.

When playing back an AFM Hi-Fi stereo sound recorded tape
Select STEREO.

When playing back a dual sound recorded tape
Select [1] or [2] to monitor the desired sound.

Note
Always return the setting to STEREO. Otherwise, the tape recorded in stereo will not be played back properly.

Note on PCM recording and playback
This camcorder cannot perform PCM recording or playback.

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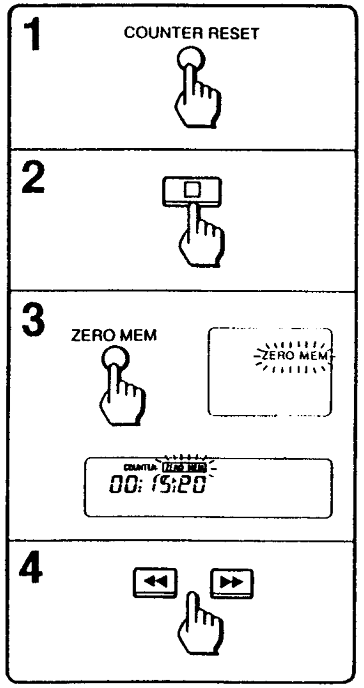
Using the Tape Counter

The counter in the viewfinder and the display window indicates the elapsed time of the recording or playback.

To Index the Entire Tape

Press the COUNTER RESET button at the beginning of the tape so that the counter shows "0:00:00".
Write down the counter reading at a particular point so that you can easily find that point later by referring to the tape counter.

(M)



To Return to a Pre-registered Point

(M)

1 **During playback, press the COUNTER RESET button at the point to be located later.**

2 **Press □ when the playback is finished.**

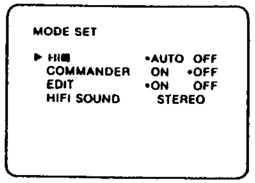
3 **Press the ZERO MEM button.**
The "ZERO MEM" indication blinks in the viewfinder and the display window.

4 **Press ◀◀ or ▶▶.**
The tape rewinds or advances and stops automatically when the counter reaches approximately "0:00:00".

To cancel the ZERO MEM function
Press the ZERO MEM button.

Notes on the counter and the ZERO MEM button
- The counter reading and the actual point on the tape may not correspond exactly. Use the counter as a guide. There will be a lag of several seconds especially when fast-forward and rewind operation is repeated or when playing back a tape with both the SP mode and LP mode recording.
- Be sure to press the ZERO MEM button after the tape stops. It does not function during recording or playback.
- The ZERO MEM mode is automatically canceled after each operation.

(N-1)



Using the Menu for Playback or Editing

MODE SET menu and PICTURE ADJUST menu can be used during playback or editing. In the MODE SET menu, various settings to further enjoy the features of the camcorder can be selected. In the PICTURE ADJUST menu, the picture in the still or slow mode can be adjusted.

MODE SET Menu

(N-1)

Hi8 AUTO/OFF

- Select AUTO to set the recording mode (Hi8 or normal) automatically depending upon the tape being used.
- Select OFF if you wish to record in the normal mode regardless of the type of tape being used.

COMMANDER ON/OFF

- Select ON when using the supplied Remote Commander for playback or editing.
- Select OFF when you do not use the supplied Remote Commander, or when you use an optional wired Remote Commander for playback or recording.

EDIT ON/OFF

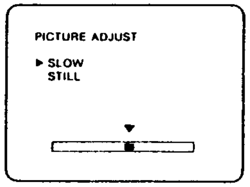
- Select ON when performing editing with the camcorder as the playback VCR to keep the degradation of picture resulting from editing to the minimum.
- Select OFF otherwise.

HIFI SOUND STEREO/$\boxed{1}$/$\boxed{2}$

- Normally select STEREO. The tape recorded in AFM Hi-Fi stereo will be played back in stereo.
- Select $\boxed{1}$ or $\boxed{2}$ to play back the desired sound of the dual sound recorded tape.

Note
Always return the setting to STEREO. Otherwise, the tape recorded in stereo will not be played back properly.

(N-2)



PICTURE ADJUST Menu

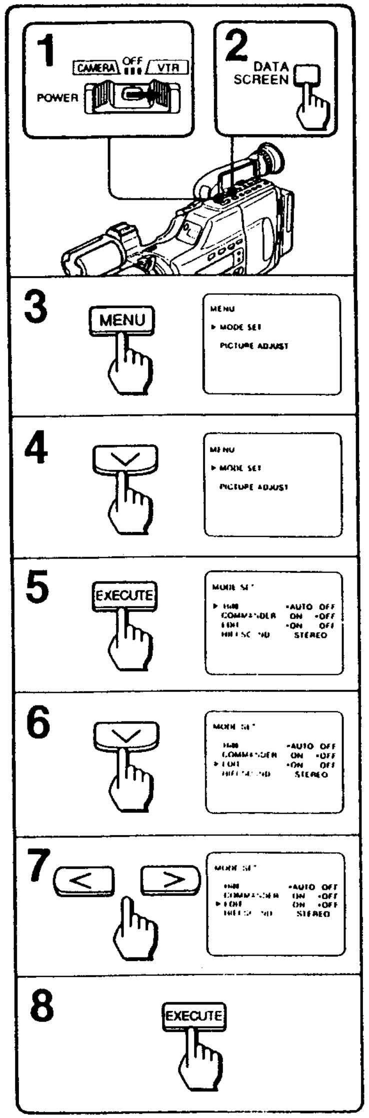
(N-2)

SLOW
Press < or > to clear out the noise bands that may appear on the top or bottom of the picture during slow playback. Adjustable only in the slow playback mode.

STILL
Press < or > so that the vertical shaking of the picture during still mode will stop. Adjustable only in the still mode.

Note
When playing back a still picture of a tape recorded in the LP mode, this camcorder automatically adjusts the picture to reduce vertical shaking to the minimum. Therefore, the STILL adjustment of the PICTURE ADJUST menu is not operable.

(N-3)



How to Call Up the Menu Display

(N-3)
Example: To select EDIT OFF.

1. **Set the POWER switch to VTR and insert a cassette.**
2. **Press the DATA SCREEN button to display the menu on the TV screen.**
3. **Press the MENU button.**
   The MENU display appears.
4. **Press ∨ and move cursor to the desired item.**
5. **Press the EXECUTE button.**
   The selected menu appears.
6. **Press ∨ and move cursor to the desired item.**
7. **Press < or > to select the desired setting.**
8. **Press the EXECUTE button.**
   The setting is stored in the camcorder and the menu display is cleared.

The setting is stored in the memory even if the POWER switch is returned to OFF or the battery pack is removed, as long as the lithium battery is installed.

To display another menu
Start from step 1 in "How to Call Up the Menu Display."

To return to the original screen
Press the MENU button.

To make multiple settings within one menu
After step 6 in "How to Call Up the Menu Display", press ∨ and move cursor to the desired item.

To clear the indication
Press the DATA SCREEN button again.

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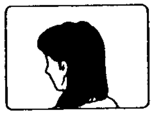
(O-1)

[a]


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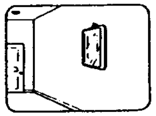
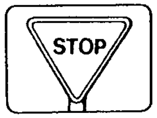
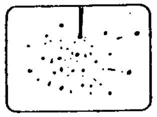
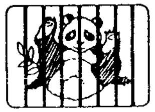
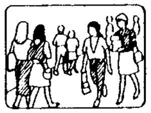


[c]


[d]


[e]


[f]


Manual Focusing

When the FOCUS switch is set to AUTO, the auto-focusing functions to easily get a in-focused picture under most shooting conditions. In the auto focusing function, the object is shot between 0.7 to 20 m (2 to 65 feet) away from the unit. But manual focusing is recommended under the following cases:

[a] to **[f]** corresponds to the illustrations. **(O-1)**

[a] Black objects which absorb the infrared beam
Ex. dark curtains or shade
[b] Objects in which the infrared reflection disperses
Ex. a smooth slanting surface (Auto focusing functions when the camera is aimed squarely at the subject.)
[c] Objects in which the infrared beam is reflected too much
Ex. traffic signs, a white wall, a mirror, or a subject through plate glass
[d] Objects not solid
Ex. fireworks, candle flame or smoke
[e] When there are other objects between the shooting object and this unit
Ex. an animal inside a cage or baby inside a cot
[f] Moving objects
Ex. a crowd or sports with lots of movement

- **Objects which emit infrared beams themselves**
  Ex. automatic doors or fluorescent lights
- **Objects more than 20 meters (65 feet) away from the recorder**
  Especially with an overcast day, or at night.

When the auto focusing does not function momentarily

- The camcorder is rapidly panned from a distant subject to a nearby subject with less contrast.
- Shooting fast moving objects.

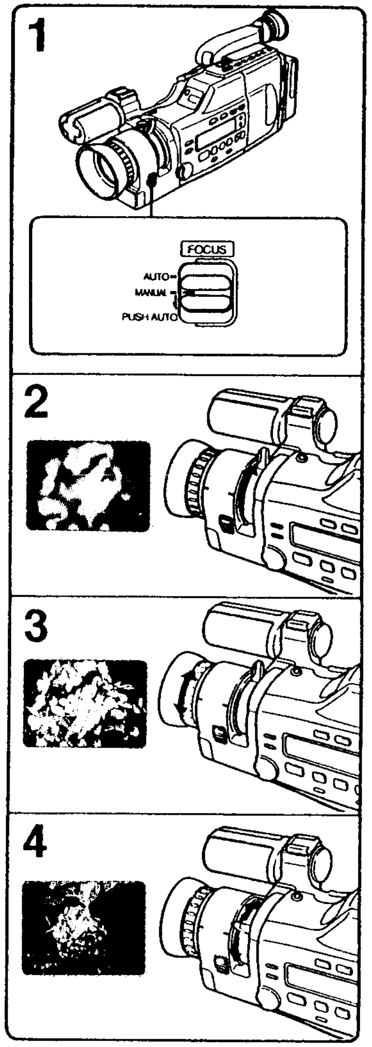
Some helpful hints

- When shooting relatively dark places, such as indoors, the depth of field in proper focus is very shallow.
- The figures on the focus ring indicate the distance between the object and the Φ mark on the camcorder.

The subjects in focus in the viewfinder in the auto focusing mode

When shooting the subject at 3 m (9 feet), the focusing point of the object in the viewfinder will be in the center. When the subject is more than 3 m (9 feet) away, objects a little to the upper left of the center tend to be in focus. When the subject is less than 3 m (9 feet) away, objects a little to the lower right of the center tend to be in focus. This tendency becomes apparent when shooting a subject at less than 1 m (3 feet).

(O-2)



Focusing Manually

(O-2)

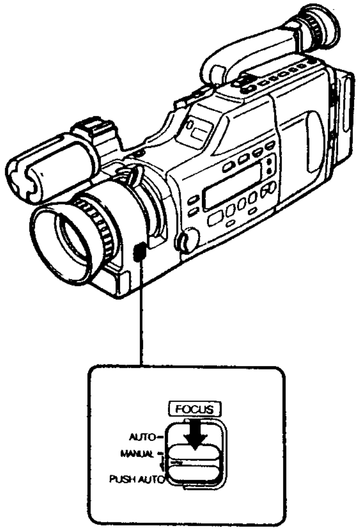
1 **Set the FOCUS switch to MANUAL.**
Check that the manual focus mark (F) appears in the viewfinder.

2 **Turn the manual zoom lever fully to the telephoto position.**

3 **Turn the focus ring to achieve sharp focus.**

4 **Move the zoom lever to set to the desired shot length.**

(O-3)



Shooting with Auto Focusing Momentarily

(O-3)

While shooting with manual focusing, press the FOCUS switch down (PUSH AUTO).
The auto focus functions while you are pressing the FOCUS switch down.

When the switch is released, manual focusing will resume. Use this switch when focusing on one object to the other for natural focusing. Shutter speed, white balance, aperture, and/or programmed AE modes will be retained to the previous setting.

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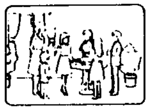
(P-1)

[a]


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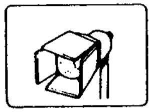

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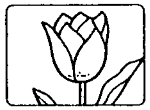

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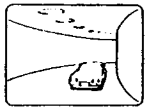
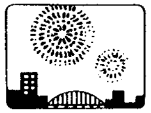
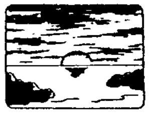


[e]


[f]


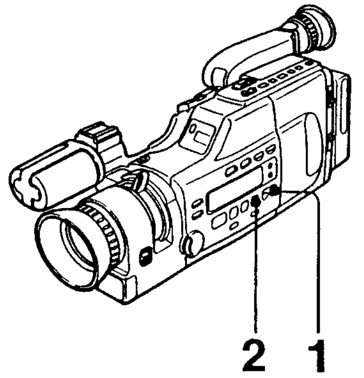
Adjusting the White Balance

In order to record the color of the object as it is, the common method is to adjust the camcorder to record the white color as white in various shooting conditions. This is accomplished by adjusting the white balance. When the AUTO LOCK switch is set to AUTO LOCK, the auto white balance functions adjust the white balance under most shooting conditions. But to record the color of the subject more precisely, without being affected by the color temperature of the ambient light, adjust the white balance manually.

[a] to **[f]** corresponds to the illustrations. **(P-1)**

	Conditions	Indication in the viewfinder
[a]	Lighting conditions change quickly	💡
[b]	Too bright, such as in photograph studios	
[c]	Monochromatic subject or background	▲
[d]	Under a sodium lamp	💡
	Under a mercury lamp	
	Under a color matching fluorescent lamp	☀
[e]	Recording outdoors: a night view, neon signs, or fireworks	
[f]	Recording outdoors: scenes after sunset or before sunrise	

(P-2)



Adjusting the White Balance Manually

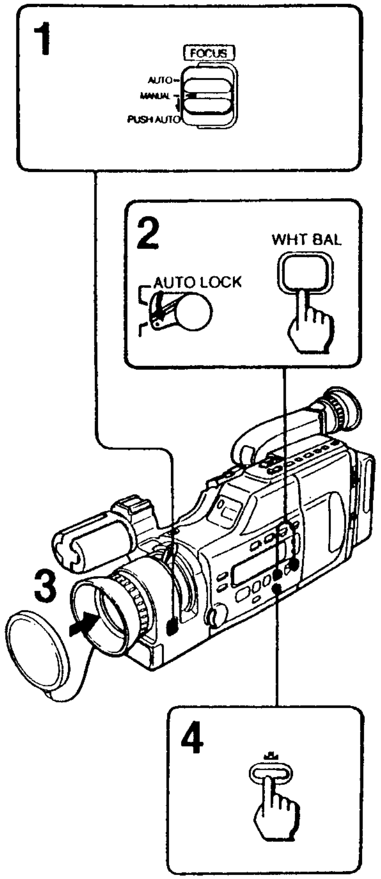
(P-2)

1 **Set the AUTO LOCK switch down.**

2 **Set to the appropriate white balance mode by pressing the WHT BAL button.**
The indication changes in the order below each time the button is pressed.

No indication → ▲ → ☀ → 💡
↑ (auto)

(P-3)



Adjusting the White Balance Precisely

(P-3)

The one-push white balance function adjusts the white balance at the press of the button and maintains that condition. When the lighting condition changed or when recording subjects with different color temperature, use the one push white balance function to achieve recording with natural colors without being affected by the ambient light.

1 **Set the FOCUS switch to MANUAL.**
The camcorder enters the manual focus mode.

2 **Set the AUTO LOCK switch down and press the WHT BAL button to call up the ▲ indication.**
The ▲ indication is blinking slowly.

3 **Attach the white lens cap to the camcorder and point it to the subject (outdoors) or to the light source (indoors).**

4 **Press the ▲ button in the recording standby mode.**
The ▲ indication will blink rapidly.

5 **The ▲ indication stops blinking to indicate that the new white balance is stored in the memory.**
The memory is retained for approximately 1 hour even if the POWER switch is set to OFF or if the battery pack is removed.

When recording under fluorescent light
- Use the one push white balance function.
- Set the AUTO LOCK switch to AUTO LOCK.

(P-4)

Color temperature (K)	Light source
10,000	Clear sky
8,000	
Blue	Slightly overcast
7,000	Cloudy, rainy
6,000	Flourescent lamp (daylight)
5,000	
White	Direct sunlight
	Fluorescent lamp (daylight)
4,000	1 hr. after/before sunrise/sunset
3,500	Fluorescent lamp (off-white)
	Studio lamp
	Halogen lamp
3,200	
3,000	
Yellow	Tungsten lamp
2,500	30 min. after/before sunrise/ sunset
Red	
2,000	Sunrise/sunset
	Candlelight

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White Balance and Color Temperature

(P-4)

The color temperature indicates the relative reddishness or bluishness of light measured in Kelvin degrees (K). It increases as the light source gets bluish and decreases as the light source gets redder. It has no direct relation with brightness of the light. The camcorder automatically adjusts the white balance within the range shown in the diagram on the left.

What the ◢■◣ indication means

- Slow blinking: white balance not adjusted
- Fast blinking: white balance being adjusted by the ◢■◣ button.
- Stops blinking: white balance adjusted

When the ◢■◣ indication does not stop blinking

The white balance cannot be adjusted and the ◢■◣ indication does not stop blinking.

- When the camcorder was pointed to an object that was not white.
- When white balance adjustment was attempted without the white lens cap.

In these cases, point the camcorder to a bright light source or point the camcorder to a white object.

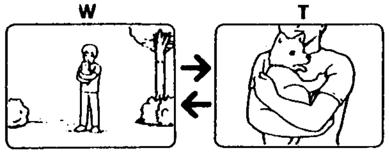
If the ◢■◣ indication still does not stop blinking

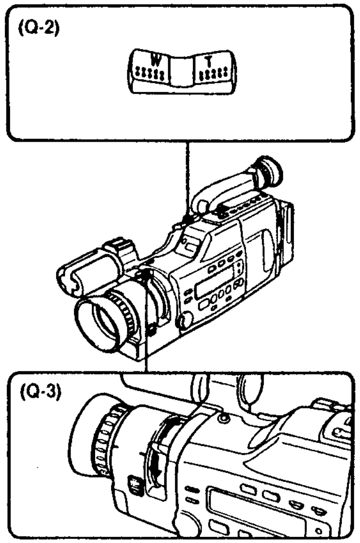
Set the AUTO LOCK switch to AUTO LOCK.

When the lighting condition changed

- Readjust the white balance by the ◢■◣ button during the recording standby mode. The ◢■◣ button does not function during recording.
- The white balance adjustment is affected by the setting of the aperture and shutter speed. When the aperture or shutter speed is adjusted manually, and the camcorder was moved from indoors to outdoors or vice versa, the white balance setting may not be correct. In this case, set the AUTO LOCK switch to AUTO LOCK again and readjust the white balance automatically.

(Q-1)





Zooming

(Q-1)

The size of the subject in the screen can be changed. Use "zoom-in" for dramatic close-ups and "zoom-out" for panoramic long shots. Also, use zooming during manual focusing. The camcorder's zoom button offers a variable speed zooming; pressing it firmly for high speed zooming and softly for relatively slow zooming.

Power Zooming
— for Smooth and Constant Zooming

(Q-2)

Press the T side of the power zoom button for telephoto.

This gives a close up shot of an object far from the lens.

Press the W side of the power zoom button for wide.

This gives a broad view of the scene.

Manual Zooming
— to Create a Dramatic Effect

(Q-3)

Turn the manual zoom lever upward for telephoto and downward for wide.

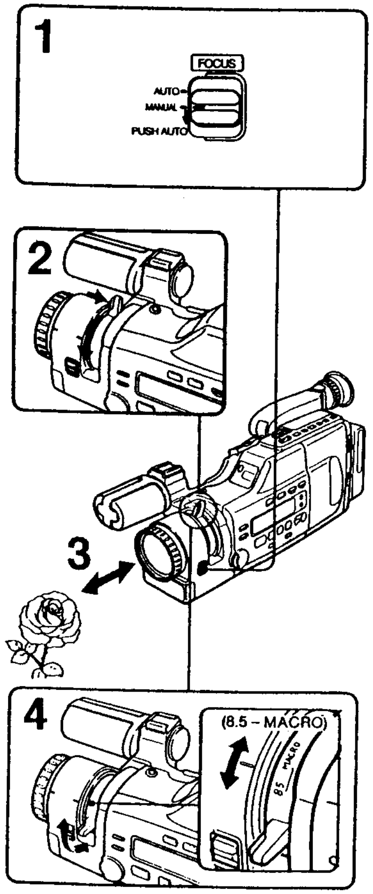
Focal length of this camcorder

The focal length is 8.5 mm to 68 mm (11/32 to 2 3/4 inches). This is approximately 46 mm to 368 mm (1 7/8 to 14 1/2 inches converted to the focal length of a 35 mm camera.

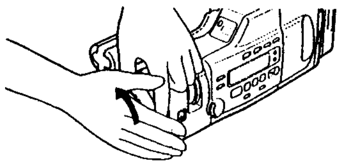
Using the zoom button on the Commander

Variable speed zoom cannot be operated with the zoom button on the Commander.

(R-1)



(R-2)



Close-ups (Macro)

Tiny objects such as flowers, insects, and images in photographs, can literally fill the screen using the close-up function. It is also useful when recording a title.

(R-1)

1 **Set the FOCUS switch to MANUAL.**
Check that the manual focus mark (F) appears in the viewfinder.

2 **Turn the zoom lever, while pressing the green macro button, to the left as far as it will go into the MACRO range.**

3 **Bring the camcorder as close as necessary to the subject to obtain the desired subject size.**
The subject can be as close to the lens surface as approximately 10 mm (13/32 inch).

4 **Turn the zoom lever within the MACRO range to focus sharply.**

When you finish the close-up shooting
Turn the zoom lever out of the MACRO range.

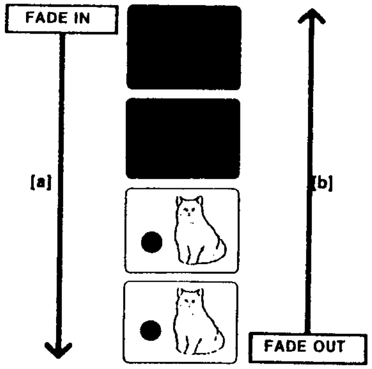
Notes
- Auto focusing does not function in macro shooting.
- If the object is closer than 10 mm (13/32 inch), it cannot be brought in focus.

If the lens hood touches the object (R-2)
Remove the lens hood. Hold the focus ring and turn the hood by pressing it with your palm. Do the same when attaching or removing the filter or conversion lens (not supplied).

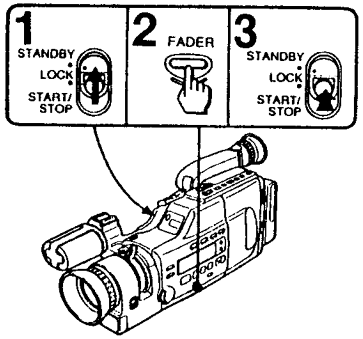
When you cannot come close to the object
You can record a close-up picture between 0.7 to 1.3 m (2 to 4 feet) away from the object.
Turn the zoom lever to the telephoto end position (68 mm).

Recommended accessory
When shooting in macro, the depth of field is very shallow. Pay attention to focusing. To keep the object in focus, use a tripod.

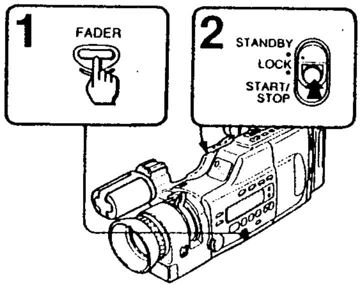
(S-1) (S-2)



(S-3)



(S-4)



Fade-in and Fade-out

When fading-in, the picture will gradually appear from a black screen. The sound will gradually increase in accordance with the picture. **(S-1)**
When fading-out, the picture will gradually disappear into a black screen. The sound will gradually decrease in accordance with the picture. **(S-2)**
Use this function to give a professional effect to your recording.

To Fade-in

(S-3)

1 **Slide the STANDBY switch up.**
The camcorder enters the recording standby mode.

2 **Press the FADER button.**

3 **Press the START/STOP button.**
Fade-in is performed and recording starts.

To Fade-out

(S-4)

1 **Press the FADER button while recording.**

2 **Press the START/STOP button to stop recording.**
Fade-out is performed and then recording stops.

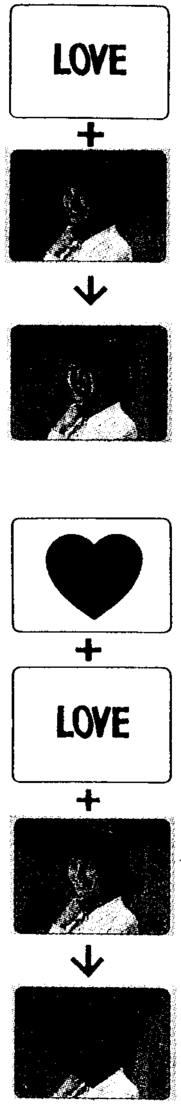
When does the FADER function work
The FADER function works only when the camcorder is in the recording standby mode or recording mode.
It does not function in the stop mode.

To cancel the fade-in/fade-out function before it is preformed
Press FADER before pressing START/STOP.

To use the fade-in/fade-out function repeatedly
Start from step 1 each time.

When the title, date or time is displayed
The title, date or time does not fade-in or fade-out.

(T-1)



Recording a Title

(T-1)

Original hand-lettered message or illustration can be superimposed over the picture. Two titles can be stored and 8 different colors can be used for the titles.

This function can be used during the following situations.

(1) During camera recording.
(2) During playback.
(3) During camera recording, superimpose a title.
Then superimpose different titles during playback.
(4) During editing, use the camcorder as a playback VCR. Titles can be superimposed over the playback picture (with or without a title superimposed) and then recorded together onto the recording VCR.

Before recording, store the desired title in the camcorder.

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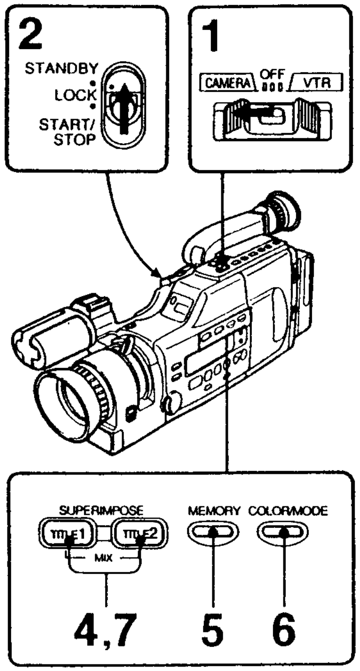
(T-2)



Storing a Title

(T-2)

Before storing

- Prepare title cards.
  Use a plain, white card and draw titles in dark color and thick lines. Street signs and printed materials with high contrast can be used as a title.
- Install the lithium battery (page 26).
  The titles cannot be kept in the memory unless the lithium battery is installed.

Operation

1. **Hold down the green button and slide the POWER switch to CAMERA.**
2. **Slide the STANDBY switch up.**
   The camcorder enters the recording standby mode.
3. **Point the camcorder to the title card and adjust the focus.**
   To focus on the title, use the macro function. (page 62).
4. **Press the TITLE 1 or TITLE 2 button.**
5. **Press the MEMORY button.**
   The title is stored to the button pressed in step 4.
6. **Press the COLOR/MODE button to select the color of the title.**
   Each time you press the button, the indication changes as follows.

   WHT (white) → BLUE → GRN (green) → CYAN ┐
   ↑ ┘
   BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

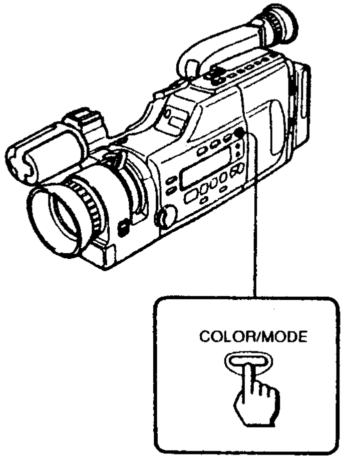
7. **Press the TITLE 1 or TITLE 2 button, whichever was pressed in step 4, to clear the title from the viewfinder.**
   The title is stored to that button until you store another one over it.

To check the title
Press the TITLE 1 or TITLE 2 button, whichever was pressed in step 4, in the standby mode. To clear the title from the viewfinder, press the same button again.

To store a new title to the TITLE 1 or TITLE 2 button
Repeat steps 1 to 7. A new title is stored and the previous title will be deleted from that button.

When storing a title in the memory
When a cassette is installed, the camcorder will return to the power off mode after 5 minutes. Take out the cassette if more than 5 minutes will be needed to store the title.

(T-3)



Function of the COLOR/MODE Button

(T-3)

The COLOR/MODE button works in two ways. When a title is displayed in the viewfinder, the color of the title can be changed. When the title is not displayed, the title display mode can be changed.

To select the color

1 **Press the TITLE 1 or TITLE 2 button to display the title.**

2 **Press COLOR/MODE.**
Each time the button is pressed, the color indication changes as follows.

WHT (white) → BLUE → GRN (green) → CYAN
↑ ↓
BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

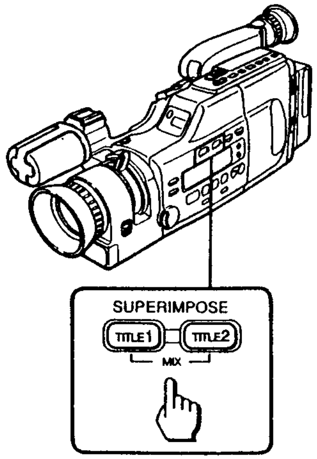
To select the display mode

1 **If the title is displayed, press TITLE 1 or TITLE 2 button to clear the title.**

2 **Press COLOR/MODE.**
Each time the button is pressed, the mode indication changes as follows.

↑: Scroll up the title.
↓: Scroll down the title.
🆃: Reverse the title.
🆃↑: Reverse the title and scroll it up.
🆃↓: Reverse the title and scroll it down.

(T-4)



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Superimposing One Title

(T-4)

1 **During playback or recording, press the TITLE 1 or TITLE 2 button at the point from which you want to use the title.**
The title is displayed. During recording the title will be recorded on to the tape. During playback the title will not be recorded on the tape.

2 **Press the same button pressed in step 1 at the point you wish to clear the title.**

When recording the title at the beginning
We recommend the following method:

1 **Set the camcorder in the standby mode.**

2 **Display the title by pressing the TITLE 1 or TITLE 2 button.**

3 **Release the standby mode.**

4 **Clear the title by pressing the same button as step 2.**

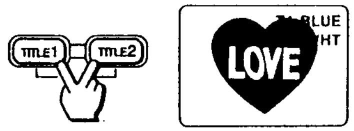
When recording a title onto the playback picture
The title can be superimposed on the playback picture but cannot be recorded with this camcorder alone. Make connections for editing and record the picture with title superimposed on another VCR. (See page 101).

About the color indication
- The color indication in the viewfinder is not recorded.
- Even after the title is displayed, the color can be changed by pressing the COLOR/MODE button.

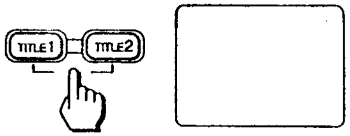
When displaying the title in the playback mode
The title is cleared if you press ◀◀ or ▶▶, and appears again when normal playback resumes.

(T-5)

1

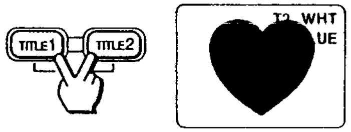


2

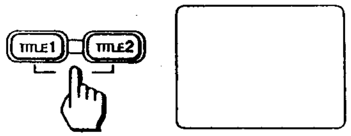


(T-6)

1



2



Layering One Title over the Other

The title stored in the TITLE 1 button and the TITLE 2 button can be displayed at the same time with one title layered on the other.

Example: When a blue heart is stored in the TITLE 1 button and a white title "LOVE" is stored in the TITLE 2 button.

To display TITLE 1 in the background and TITLE 2 in the foreground
(T-5)

1 **During playback or recording, hold down the TITLE 1 button and press the TITLE 2 button.**

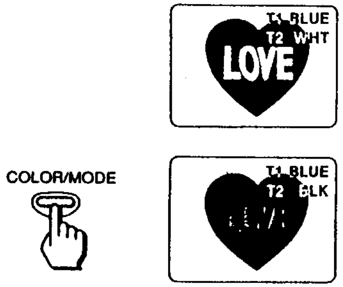
2 **Press the TITLE 1 or TITLE 2 button at the point you wish to clear the title.**

To display TITLE 2 in the background and TITLE 1 in the foreground
(T-6)

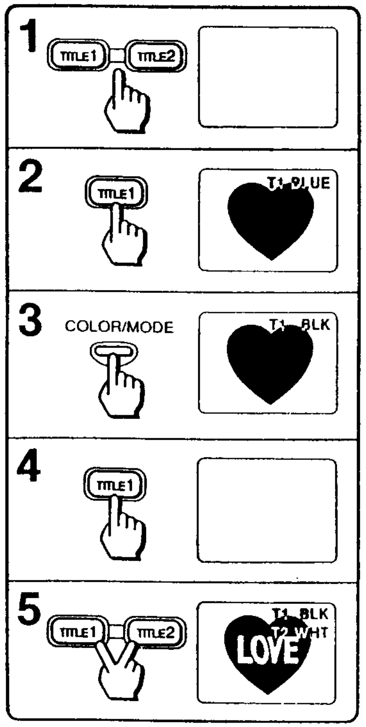
1 **During playback or recording, hold down the TITLE 2 button and press the TITLE 1 button.**
In this case, TITLE 2 "LOVE" is hidden behind TITLE 1 and is not seen. Before using this function, check whether the title stored in the memory is appropriate for this application.

2 **Press the TITLE 1 or TITLE 2 button at the point you wish to clear the title.**

(T-7)


T1 BLUE
T2 WHT
LOVE
COLOR/MODE
T1 BLUE
T2 BLK

(T-8)


1
TITLE1
TITLE2
2
TITLE1
T1 BLUE
3
COLOR/MODE
T1 BLK
4
TITLE1
5
TITLE1
TITLE2
T1 BLK
T2 WHT
LOVE

To Change the Color of the Title after Layering One Title over the Other

Example: When a blue heart is stored in the TITLE 1 button and a white title "LOVE" is stored in the TITLE 2 button.

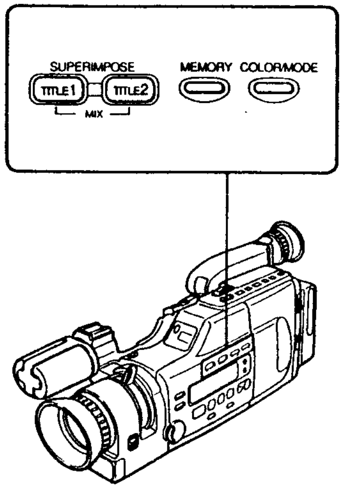
To change the color of the title in the foreground
(T-7)

Press the COLOR/MODE button.
Each press of COLOR/MODE will change the color of "LOVE".

To change the color of the title in the background
(T-8)

1. **Press the TITLE 1 or TITLE 2 button to clear the title.**
2. **Press the TITLE 1 button.**
   TITLE 1, blue heart, is displayed.
3. **Press the COLOR/MODE button to change the color of TITLE 1.**
   The color of TITLE 1, blue heart, changes.
4. **Press the TITLE 1 button.**
   TITLE 1, black heart, is cleared from the picture frame.
5. **Hold down the TITLE 1 button and press the TITLE 2 button.**

(T-9)


SUPERIMPOSE
TITLE1
TITLE2
MIX
MEMORY
COLOR/MODE

Various Title Display Modes

Follow the steps below to enjoy the various title display modes.

(T-9)

Step 1
During camera recording or playback, press the COLOR/MODE button to select the title display modes. Refer to the following page for the available modes.

Step 2
Call up the title.

To display one title:
Press the TITLE 1 or TITLE 2 button.
To layer one title over the other:
Call up the title referring to page 69.

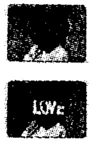
Step 3
Clear the title.

When one title is displayed:
Press the same button pressed in step 2.

When one title is layered over the other:
Press the TITLE 1 or TITLE 2 button.

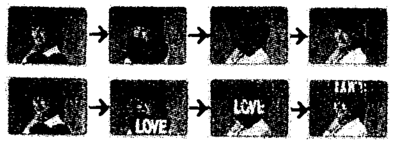
Title display modes
Each press of the COLOR/MODE button in step 1 (page 71) changes the title display modes in the following order.

(T-10)



- **Normal title display (T-10)**

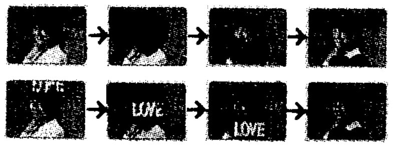
(T-11)



- **Scrolling up the title (T-11)**

Step 1: The ↑ indication is displayed.
Step 2: The title is scrolled upwards to the center and stops.
Step 3: The title is scrolled up and out of the picture frame.

(T-12)



- **Scrolling down the title (T-12)**

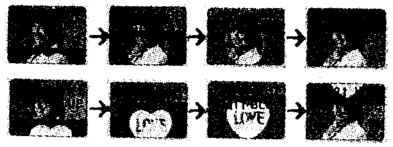
Step 1: The ↓ indication is displayed.
Step 2: The title is scrolled downwards to the center and stops.
Step 3: The title is scrolled down and out of the picture frame.

(T-13)

- **Reversing the title with the picture (T-13)**

Step 1: The ■ indication is displayed.
Step 2: The reversed title is displayed.
Step 3: The title is cleared from the picture frame.

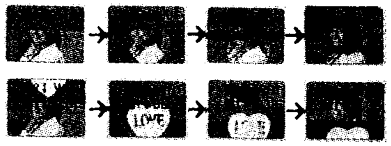
(T-14)



- **Scrolling up the reversed title (T-14)**

Step 1: The ■↑ indication is displayed.
Step 2: The reversed title is scrolled upwards to the center.
Step 3: The reversed title is scrolled up and out of the picture frame.

(T-15)



- **Scrolling down the reversed title (T-15)**

Step 1: The ■↓ indication is displayed.
Step 2: The reversed title is scrolled downwards to the center.
Step 3: The reversed title is scrolled down and out of the picture frame.

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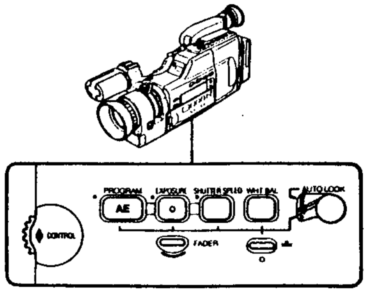
When displaying one title over the other
- TITLE 1 and TITLE 2 cannot be called up in the different title display mode at the same time. For example, calling up TITLE 1 in the reverse mode and TITLE 2 in the scroll up mode at the same is not possible.
- When scrolling the two titles layered, press the second title button before the first title starts to scroll.

Note on scrolling
You can scroll the title only when the camcorder is in the recording standby, recording, or normal playback mode. Only normal title display mode (no indication) and reverse title display mode (■) can be performed during modes other than the three above. (Refer to "Various Playback Modes" on page 45.) If you select the scroll mode first, and then set the camcorder to the modes other than the three above, the scroll mode will be canceled automatically.

Recording a Picture Using Programmed AE and Manual Modes

(U-1)



Viewfinder	Display window
(U-2)	
(U-3)	
(U-4) Example AE A 500 ▶ F8	Example
(U-5) Example AE S ▶ 500 F8	Example
(U-6) No indication Example	Example

(U-1)

A variety of camera recording modes can be selected for this camcorder, from the full automatic mode to the programmed AE mode in which camera recording modes most suited for the subject and/or the condition is adjusted automatically. In addition, the manual mode enables independent setting of the exposure value, and shutter speeds. Setting of a single parameter or a combination of two parameters at one time is possible.

Camera Recording Modes Available

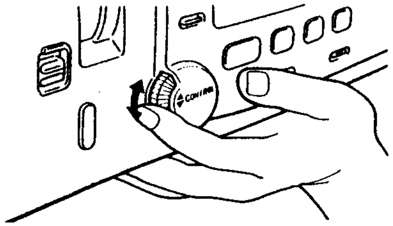
With the AUTO LOCK switch set down, each press of the PROGRAM AE button changes the camera recording mode as follows.

→ Portrait	(U-2)
↓	
Sports	(U-3)
↓	
Aperture priority	(U-4)
↓	
Shutter priority	(U-5)
↓	
Manual	(U-6)

The selected parameters are displayed.

During programmed AE and manual modes
Focus and white balance can be adjusted independently from the programmed AE mode or the manual mode. Manual adjustment of focus and white balance is recommended.

(U-7)

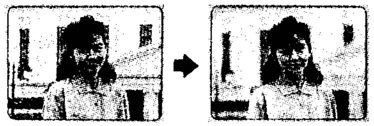


How to use the CONTROL dial (U-7)
Move the dial slowly using the tip of your index finger. If the dial is released immediately after holding it to the maximum position, the sound of the dial returning to the normal position may be recorded.

When recording in the aperture priority mode or the manual mode
Do not point the lens at the sun or other light sources when the aperture value is set to F1.4.

Portrait Mode

(V-1)



(V-1)

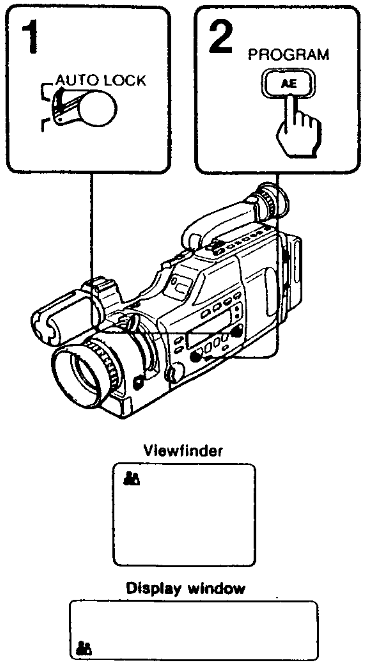
In the portrait mode, the subject is in focus and the background is out of focus. The aperture (opening of the iris) and the shutter speed is automatically adjusted to maintain the appropriate exposure according to the size and brightness of the subject. The portrait mode is most effective when used outdoors.

Portrait Mode Applications

- To shoot a subject with not much movement, such as a portrait of a person or a close up of a flower.
- To zoom in a subject with the telephoto mode.
- To shoot a subject with an obstruction in the foreground.

Operation

(V-2)



(V-2)

1 **Set the AUTO LOCK switch down.**

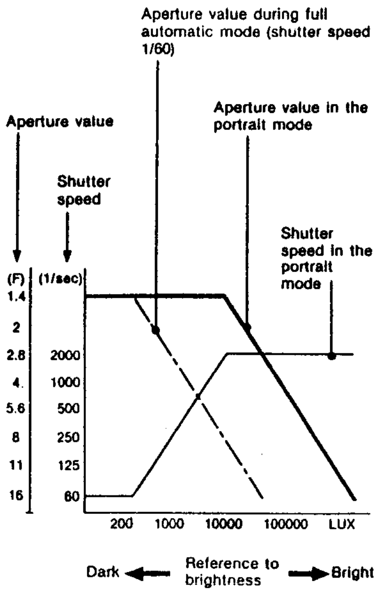
2 **Press the PROGRAM AE button until the 👥 indication is displayed in the viewfinder and the display window.**
The camcorder enters the portrait mode.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the portrait mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the portrait mode
Focus and white balance can be adjusted manually. See page 55 (focus) and page 58 (white balance) for details.

(V-3)



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Hint for effective camera work
Use of the portrait mode with the following method will gradually make the background out of focus while keeping the subject in focus.

1 **Enter the portrait mode referring to page 76.**

2 **Set the AUTO LOCK switch to AUTO LOCK and start recording.**

3 **Set the AUTO LOCK switch down.**
The camcorder will enter the portrait mode and make the background out of focus.

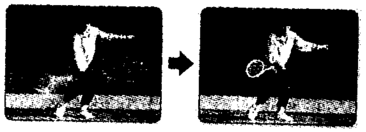
The theory of the portrait mode
(V-3)

When shooting outdoors under bright sunlight in the full automatic mode, the aperture tends to close and both the subject and the background comes into focus (deep depth of field). This is a result of excessive light. In order to bring the subject in focus and keep the background out of focus (shallow depth of field), the aperture should be opened. In the portrait mode, the aperture is controlled to open by automatically selecting the shutter speed (between 1/60 and 1/2000 that matches the shooting situation) to maintain the appropriate exposure.

When recording under fluorescent, sodium, or mercury lamps
- The brightness of the recorded picture may flicker.
- The color of the recorded picture may vary.

Sports Mode

(W-1)



(W-1)

By recording in the sports mode, a subject moving at high speed can be recorded and the picture can be observed more clearly with less picture shaking in the still or slow mode compared to the full automatic mode. The shutter speed and the aperture are automatically adjusted to maintain the appropriate exposure according to the speed of the subject.

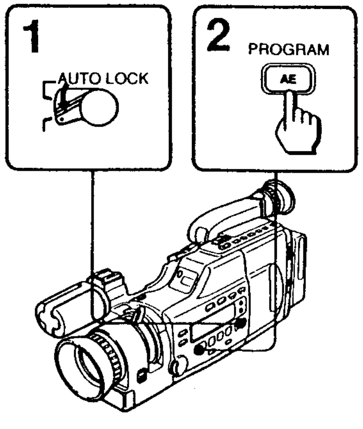
Sports Mode Applications

- To shoot outdoor sports scenes, such as football, tennis, and golf.
- To shoot the scenery from inside a moving automobile.

Operation

(W-2)

(W-2)



Viewfinder

Display window

1 Set the AUTO LOCK switch down.

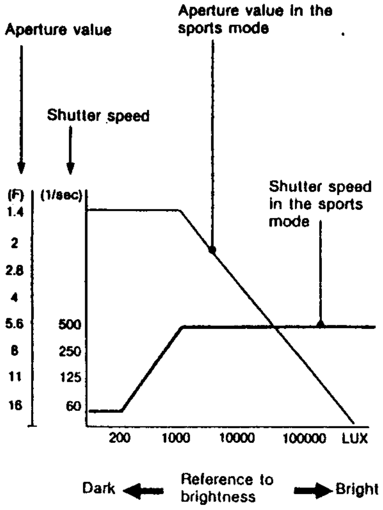
2 Press the PROGRAM AE button until the indication is displayed in the viewfinder and the display window.
The camcorder enters the sports mode.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the sports mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the sports mode
Focus and white balance can be adjusted manually. See page 55 (focus) and page 58 (white balance) for details.

(W-3)



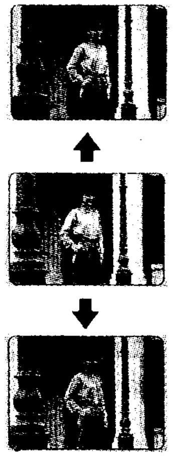
Hint for effective camera work
When shooting athletic matches from a distance, such as a football game, we tend to zoom from the wide to the telephoto position to catch the once-only events. Even under these circumstances, by using the sports mode, a sharp picture without camera wobble can be obtained when played back later in the slow or still mode.

The theory of the sports mode
(W-3)
When the shutter speed is shifted to a faster speed, subjects moving at high speed, such as a tennis racket or golf club, can be recorded and then played back clearly with less picture shaking compared to the full automatic mode. With this camcorder, the shutter speed can also be set independently from the aperture. However, the picture may become dark when the lighting condition is insufficient. In the sports mode, the fastest shutter speed that matches the shooting situation (between 1/60 and 1/500) is selected to maintain the appropriate exposure.

Note
The sports mode is effective under sufficient lighting, such as under sunlight. When used under extremely dark conditions, the shutter speed may not be shifted to high speeds.

When recording under fluorescent, sodium, or mercury lamps
- The brightness of the recorded picture may flicker.
- The color of the recorded picture may vary.

(X-1)



Aperture Priority Mode

(X-1)

The aperture priority mode enables to select the aperture which determines the depth of field. 15 aperture values, from F1.4 to F16, can be selected. The shutter speed is automatically set (between 1/60 and 1/2000) in combination with the aperture value to maintain the appropriate exposure.

Aperture Priority Application

To shoot the picture with different depths of field.

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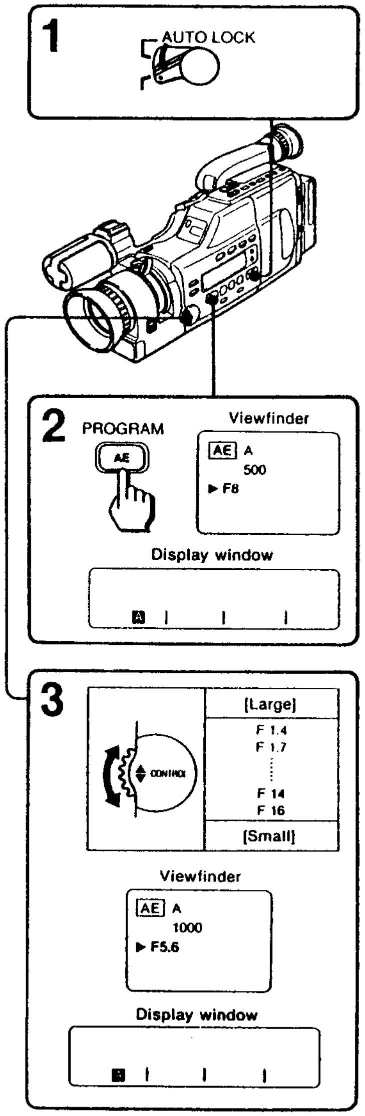
(X-2)



Operation

(X-2)

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until the AE A indication is displayed in the viewfinder and A in the display window.**
The camcorder enters the aperture priority mode.

3 **Move the CONTROL dial to set to the desired aperture value.**
The selectable aperture values are:
F1.4, F1.7, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14, F16

The shutter speed indication corresponds to the change of the aperture value.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the aperture priority mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the aperture priority mode
Focus and white balance can be adjusted manually. See page 55 (focus) and page 58 (white balance) for details.

Hints for effective camera work

- **Understanding the depth of field**

The depth of field is the area in which the objects are in focus. A shallow depth of field shows the subject in focus and the background out of focus. The greatest depth of field shows everything in focus.

- **Depth of field and aperture value**

A large aperture provides a shallow depth of field and a small aperture provides a deep depth of field.

- **Depth of field and object-to-camera distance**

When the object-to-camera distance is near, the depth of field will be shallow. When the object-to-camera distance is far, the depth of field will be great.

- **Depth of field and zooming**

The depth of field will be shallow in the telephoto position. The depth of field will be great in the wide position.

- **Summary**

	A shallow depth-of-field	A deep depth-of-field
Aperture	Towards open	Towards closed
Object-to-camera distance	Near	Far
Zoom	Telephoto	Wide

When the ▶ indication in the viewfinder is blinking

The lighting condition is insufficient or excessive for the aperture priority mode. In this case, move the CONTROL dial and reset the aperture.

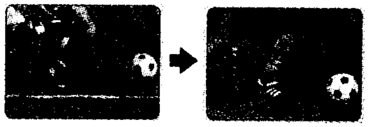
- **Insufficient light (when the picture inside the viewfinder is dark)**
  Decrease the aperture.
- **Excessive light (when the picture inside the viewfinder is too bright)**
  Increase the aperture.

Although we recommend camera recording without the ▶ indication blinking, camera recording can be performed even when the ▶ indication is blinking. Check the picture in the viewfinder before recording.

When recording under fluorescent, sodium, or mercury lamps

- The brightness of the recorded picture may flicker.
- The color of the recorded picture may vary.

(Y-1)



Shutter Priority Mode

(Y-1)

The shutter priority mode enables selection of the shutter speed. 16 shutter speeds can be selected from 1/60 (normal speed) to 1/10000. When a fast shutter speed is selected, subjects moving at high speed can be recorded and the picture can be observed more clearly with less picture shaking in the still or slow modes compared to slower shutter speeds. The aperture value is automatically set (between F1.4 and F16) in combination with the shutter speed to maintain the appropriate exposure.

Shutter Priority Applications

- To shoot a golf swing or a tennis match with the tennis ball captured clearly.
- When you wish to playback certain scenes with high speed movements in a clear, sharp picture.

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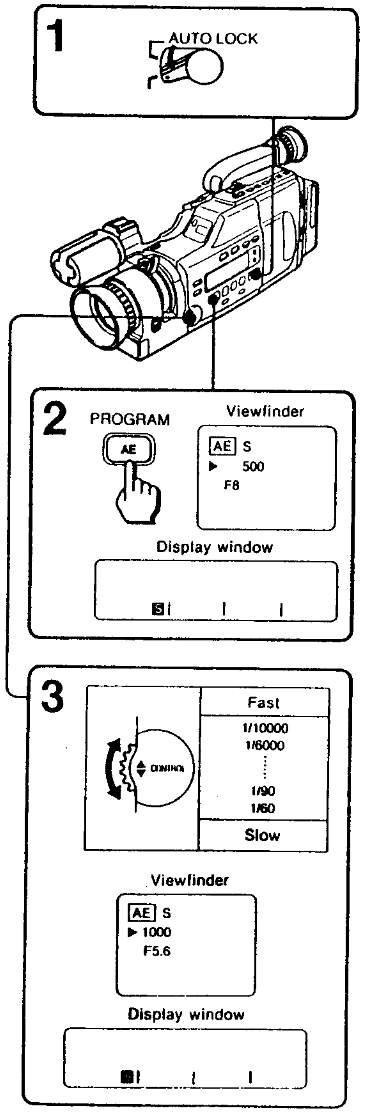
(Y-2)



Operation

(Y-2)

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until the AE S indication is displayed in the viewfinder and S in the display window.**
The camcorder enters the shutter priority mode.

3 **Move the CONTROL dial to set to the desired shutter speed.**
The selectable shutter speeds are:
1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000

The aperture value indication corresponds to the change of the shutter speed.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the shutter priority mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the shutter priority mode
Focus and white balance can be adjusted manually. See page 55 (focus) and page 58 (white balance) for details.

Hints for effective camera work
Refer to the chart below for the appropriate shutter speed for the object. Check the brightness of the picture in the viewfinder.

When to use	Recommended speed
• On clear days, recording golf or tennis scenes. (To view the hit ball clearly in the slow or still mode, select shutter speeds between 1/1000 and 1/4000) • Recording the skiers.	1/10000 to 1/725
• On overcast days, recording a moving merry-go-round or a roller coaster. • Recording outdoors stably from inside a moving automobile. • General athletic scenes, marathon, etc.	1/500 to 1/125
• Used in place of the ND2 filter to reduce the exposure to approximately 1/2. • Recording indoors for stable recording.	1/100
• Recording under bright sunlight. To avoid out-of-focus pictures while recording with small aperture.	1/90

When the ▶ indication in the viewfinder is blinking
The lighting condition is insufficient or excessive for the shutter priority mode. In this case, move the CONTROL dial and reset the shutter speed.

Although we recommend camera recording without the ▶ indication blinking, camera recording can be performed even if the ▶ indication is blinking.
In this case, check the picture in the viewfinder before recording.

When is shutter speed 1/60 indicated?
1/60 indication is displayed only when the shutter speed is set to 1/60 using the CONTROL dial. Even though the shutter speed is set to 1/60 during the full automatic mode, the indication will not be displayed.

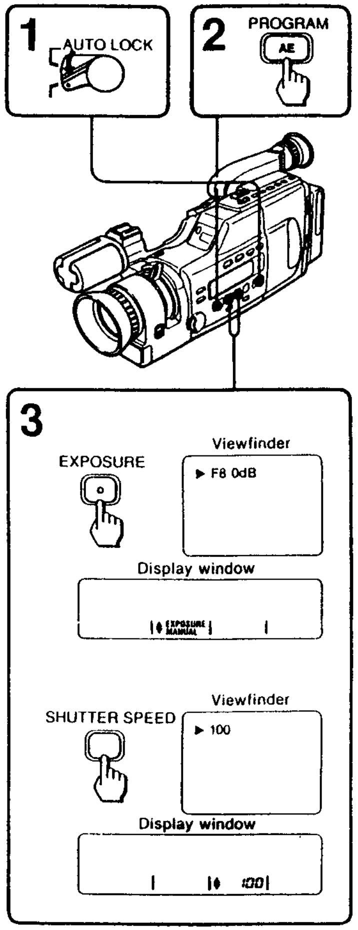
When the shutter speed is set 1/250 or faster
Try to shoot under sunlight outdoors, and with the video light indoors.

When shooting a very bright object
A vertical band (smear) may appear on the screen if shot at high speeds.

When the shutter speed is changed when shooting a TV screen
The brightness of the recorded picture may vary.

When recording under fluorescent, sodium, or mercury lamps
- The brightness of the recorded picture may flicker.
- The color of the recorded picture may vary.

(Z-1)


1
AUTO LOCK
2
PROGRAM
AE
3
EXPOSURE
Viewfinder
▶ F8 0dB
Display window
EXPOSURE MANUAL
SHUTTER SPEED
Viewfinder
▶ 100
Display window
100

Manual Mode

In the manual mode, independent setting of the exposure (aperture/gain) value, and shutter speeds can be performed. Setting of a single parameter or a combination of two parameters at one time is possible.

Setting One Parameter

(Z-1)

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

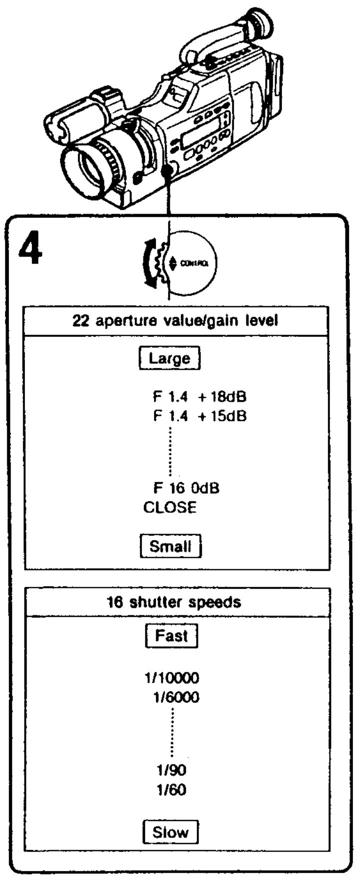
At this point, the shutter speed is set to 1/60, the exposure (aperture/gain) are automatically adjusted to the shooting condition.

3 **Press the button of the parameter to be set.**

To set the exposure (aperture/gain) value
Press the EXPOSURE button. The exposure (aperture/gain) is set to the value at the instant the button was pressed.

To set the shutter speed
The first press of the SHUTTER SPEED button sets the shutter speed to 1/100 speed and the second press sets it to 1/1000. To set to other speeds, go to step 4.

Continued on the next page


4
CONTROL
22 aperture value/gain level
Large
F 1.4 +18dB
F 1.4 +15dB
F 16 0dB
CLOSE
Small
16 shutter speeds
Fast
1/10000
1/6000
1/90
1/60
Slow

4 **Select the desired setting by the CONTROL dial.**

The indication in the viewfinder changes as shown in the illustration and below.

Selectable aperture value/gain level
F1.4/+18dB, F1.4/+15dB, F1.4/+12dB, F1.4/+9dB, F1.4/+6dB, F1.4/+3dB, F1.4/0dB, F1.7/0dB, F2/0dB, F2.4/0dB, F2.8/0dB, F3.4/0dB, F4/0dB, F4.8/0dB, F5.6/0dB, F6.8/0dB, F8/0dB, F9.6/0dB, F11/0dB, F14/0dB, F16/0dB, CLOSE

Selectable shutter speeds
1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, and 1/10000

Note on the exposure indication
When recording indoors, the exposure indication may be F2 +3dB. This indicates that the gain level has increased while the aperture value is not F1.4 (open). This adjustment can only be made in the automatic mode. You cannot make such an adjustment in the manual mode.

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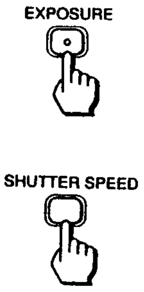
(Z-2)



To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the manual mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the manual mode
Focus and white balance can be adjusted manually. See page 55 (focus) and page 58 (white balance) for details.

The buttons pressed and the indication in the viewfinder
(Z-2)

- **When the EXPOSURE button is pressed**
  The camcorder indicates the aperture value/gain level that was last detected when the camcorder was controlling the exposure automatically. At the same moment, the exposure is locked to the indicated level.
- **When the SHUTTER SPEED button is pressed**
  The first press of this button sets the camcorder to the 1/100 shutter speed. The second press sets the camcorder to the 1/1000 shutter speed. For a quick access to the desired shutter speed, first press the button and set to the shutter speed whichever is closer to the desired speed and then turn the CONTROL dial.

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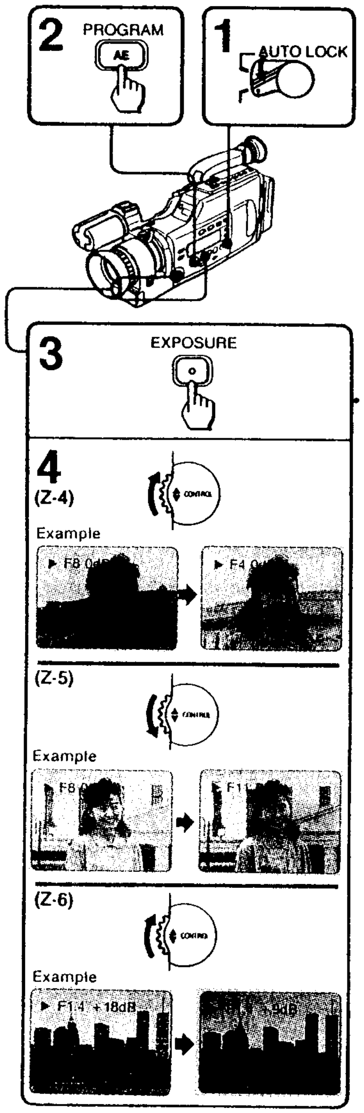
(Z-3)



Exposure Control Applications

(Z-3)

Adjust the exposure when there is an extreme difference in the brightness between the subject and the background.
This camcorder automatically raises the gain level to capture the subject clearly when the shooting condition is dark. Due to this function, the recorded picture may seem brighter than the actual shooting condition. In these cases, set the gain level to reproduce the actual atmosphere.

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

At this point, the shutter speed is set to 1/60, the aperture and gain are automatically adjusted to the shooting condition.

3 **Press the EXPOSURE button.**

4 **Move the CONTROL dial to set the aperture/gain to the appropriate value.**

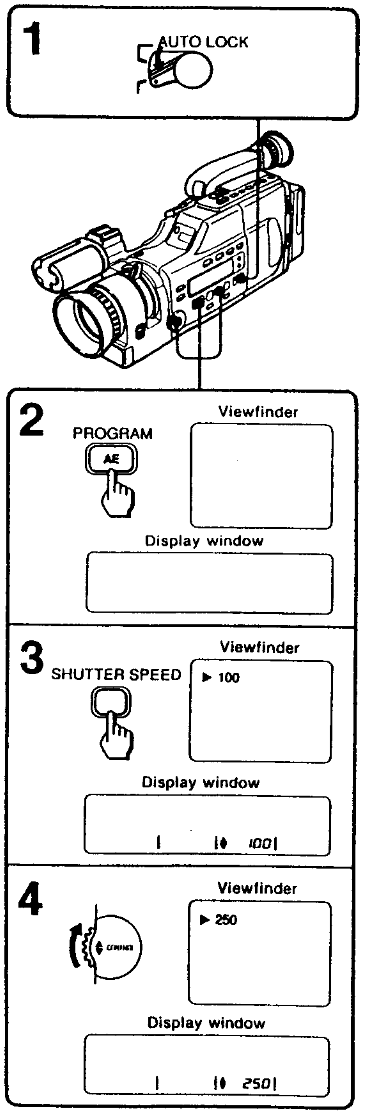
Illumination from behind the subject and opposite the camera (Back light)
(Z-4)
Move the CONTROL dial up to decrease the aperture value.

Illumination too strong
(Z-5)
Move the CONTROL dial down to increase the aperture value.

Shooting the picture in the dark effectively
(Z-6)
Move the CONTROL dial down to lower the gain level.

When the gain level is too high
The picture may become distorted.

(Z-7)


1
AUTO LOCK
2
PROGRAM
AE
Viewfinder
Display window
3
SHUTTER SPEED
Viewfinder
▶ 100
Display window
100
4
Viewfinder
▶ 250
Display window
250

Setting Multiple Parameters

(Z-7)

Example: To set the shutter speed to 1/250, aperture value/gain level to F4 0dB.

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

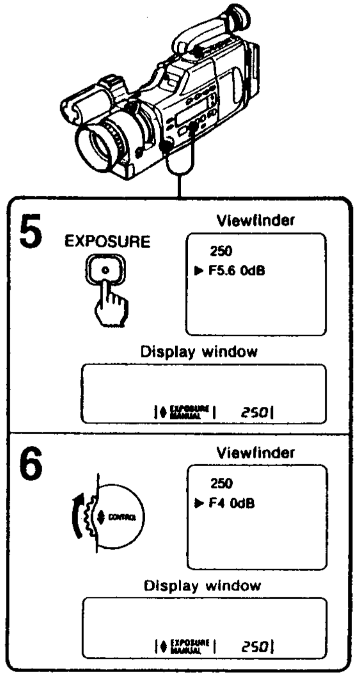
At this point, the shutter speed is set to 1/60, the aperture and gain are automatically adjusted to the shooting condition.

3 **Press the SHUTTER SPEED button.**

4 **Move the CONTROL dial and set the shutter speed to 250.**

To set the shutter speed only, the setting is completed here.

Continued on the next page


5
EXPOSURE
Viewfinder
250
▶ F5.6 0dB
Display window
EXPOSURE MANUAL
250
6
Viewfinder
250
▶ F4 0dB
Display window
EXPOSURE MANUAL
250

5 **Press the EXPOSURE button.**

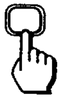
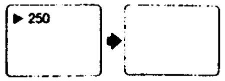
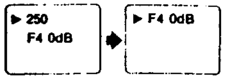
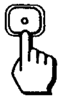
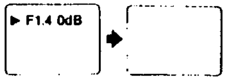
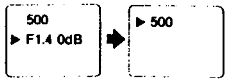
6 **Move the CONTROL dial and set the aperture value to F4 0dB.**

Camera recording will be performed under this setting even when the shooting condition changes.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

Which parameter to be set first
Setting can be performed from either parameter.
Press the button of the desired parameter.
The indication when the button is pressed is the same as those explained in page 90.

(Z-8)

Parameter	Indications in the Viewfinder (setting examples)
SHUTTER SPEED 	 ▶ 250
	 ▶ 250 F4 0dB → ▶ F4 0dB
EXPOSURE 	 ▶ F1.4 0dB
	 500 ▶ F1.4 0dB → ▶ 500

To change the setting

- **Parameter with the ▶ indication:**
  Move the CONTROL dial to change the setting.

- **Parameter without the ▶ indication:**

1 **Press the button of the desired parameter to move the ▶ indication to that parameter.**

2 **Then move the CONTROL dial to change the setting.**

To quit the setting
(Z-8)
Parameter with the ▶ indication:
Press the button of that parameter. The indication is erased from the viewfinder.

Parameter without the ▶ indication:

1 **Press the button of the parameter to be erased to move the ▶ indication to that parameter.**

2 **Then press the same button to erase that parameter from the viewfinder.**

When the parameter is erased
The adjustment of that parameter will be as follows.

- Shutter speed: Locked to 1/60.
- Aperture value/gain level: Automatic adjustment

(Z-9)

	Exposure		Shutter speed
	Aperture value	Gain level	
Selectable steps	16 steps	7 steps	16 steps
Variation of exposure (in terms of EV steps)	0.5 EV steps	0.5 EV steps	0.5 EV steps
Towards bright (+ EV) ↕ Towards dark (– EV)	F1.4 ↕ F16	+18 dB ↕ 0 dB	1/60 ↕ 1/10000

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Advanced Application of the Manual Mode

The manual adjustment function offers an advanced video camera recording technique by controlling the exposure with the balance of shutter speed, aperture value and gain level.

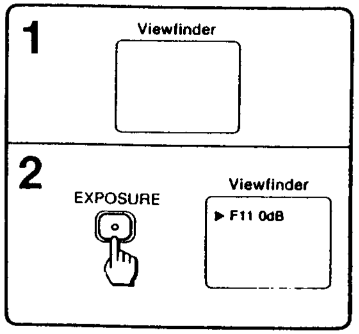
Understanding the relation between aperture value, shutter speed, and gain
Exposure is measured in the units of Exposure value (EV). In this camcorder, the total EV can be varied or kept at a constant level by controlling the balance of the parameters.

Refer to the chart on the left (Z-9) for an overview of the relation between aperture value, gain, and shutter speed of this camcorder.

The relation between exposure and the aperture, gain, and shutter speed can be concluded as:

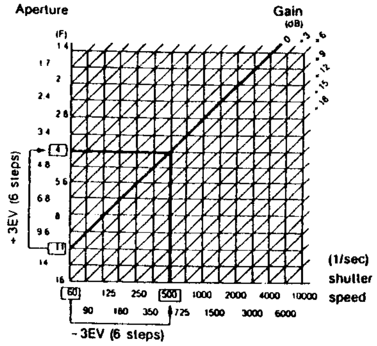
EV (Exposure value)	=	Exposure (aperture/gain) control	+	Shutter speed control

(Z-10)



(Z-11)

Relation between exposure (aperture/gain) and shutter speed



Setting in step 2
Aperture value: F11
Shutter speed: 1/60
Gain level: 0dB

Vertical axis: Aperture value in 0.5 EV/step
Horizontal axis: Shutter speed in 0.5 EV/step
Diagonal axis: Gain level in 0.5 EV/step

Example: To change the setting without changing the exposure
(Z-10)

1 **Set the camcorder to the manual mode referring to page 92.**

2 **Press the EXPOSURE button.**
At this point, suppose the exposure is F11 of the aperture value and 0dB of the gain level. The shutter speed is set to 1/60.

The setting at this point becomes the basic reference to perform the following setting.

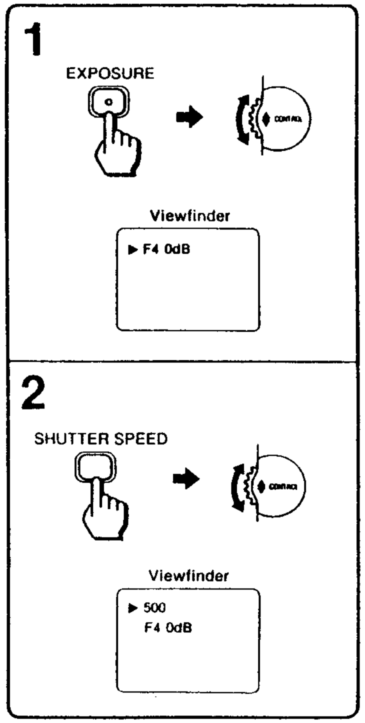
Let's set the exposure at this point at 0 EV.

0 EV =	Exposure (aperture/gain) control	+	Shutter speed control

In order to maintain the same exposure, the total exposure should be kept to 0 EV in any case.

3 **Refer to the diagram on the left (Z-11) to choose the setting.**

(Z-12)



To set the aperture to F4 without changing the exposure
(Z-12)

1 **Press the EXPOSURE button and move the CONTROL dial to set the aperture to F4.**
When shifting the aperture from F11 to F4, the exposure becomes 6 steps brighter. This means that in terms of EV, the total exposure becomes +3 EV. In order to keep the total exposure to 0 EV, reduce the exposure by −3 EV with shutter speed.

2 **How it works:**
What is required here is to reduce the exposure by −3 EV, i.e. 6 steps, by shifting the shutter speed from 1/60 to 1/500.
Operation:
Press the SHUTTER SPEED button and move the CONTROL dial to set the shutter speed to 1/500.

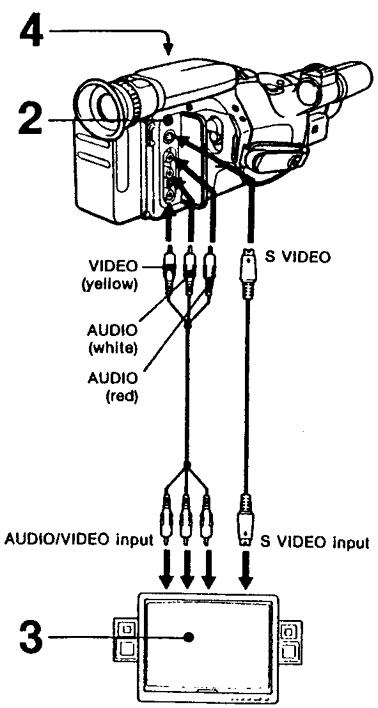
	Aperture/gain control		Shutter speed control
0 EV =	F11 to F4	+	1/60 to 1/500
	+3 EV		-3 EV

Conclusion
To change the setting while having the same exposure, change the exposure (aperture/gain) and shutter speed by the same numbers of steps.
Example 1: When you increase the exposure (aperture/gain) by 6 steps, increase the shutter speed by 6 steps.
Example 2: When you reduce the exposure (aperture/gain) by 3 steps, slow down the shutter speed by 3 steps.

Hint for effective camera work
Gain can be used in terms of film sensitivity of a still camera.

Notes
- When shooting outdoors, the brightness of the object may change due to the change of weather.
- When the shooting condition changes, resetting of the parameters is recommended.

(AA-1)


4
2
VIDEO (yellow)
AUDIO (white)
AUDIO (red)
S VIDEO
AUDIO/VIDEO input
S VIDEO input
3

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Custom Preset Function

The camcorder can be preset to record the picture with the desired contrast, color, sharpness, and hue. Adjust the camera, if necessary, after making several trial recordings.

Connections

(AA-1)

When using the custom preset function, adjust the picture by shooting a subject and checking the picture on a TV or a monitor.

1 **Connect the camcorder and the TV or monitor referring to the illustration.**

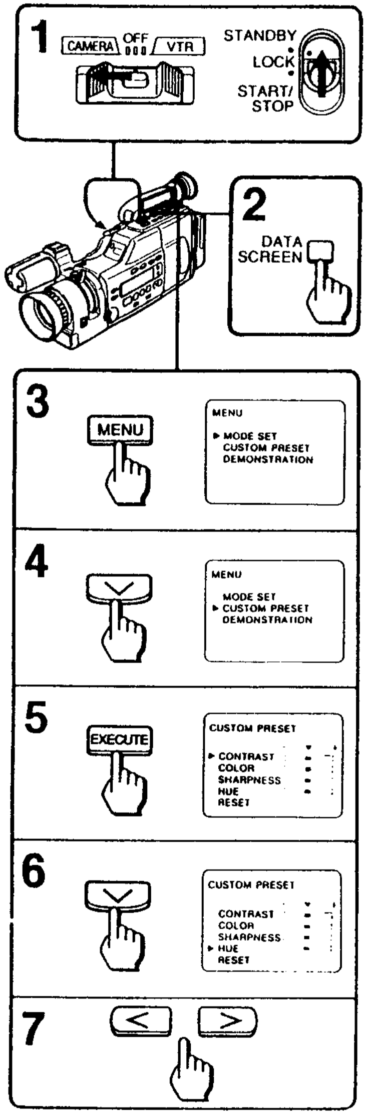
2 **Set the IN/OUT selector to OUT.**

3 **Set the TV/VIDEO selector on the TV or monitor to VIDEO.**

Understanding the setting in the CUSTOM PRESET menu
The custom preset function is effective only when the tape recorded in the CUSTOM PRESET mode is viewed on the TV or monitor that was connected to the camcorder at the time of the setting.
Therefore, the tape may not reproduce the picture in the expected contrast, color sharpness, or hue, when played back on a different TV or monitor.

Note
Refer to the operating instructions of the TV.

(AA-2)


1
CAMERA
OFF
VTR
STANDBY
LOCK
START/STOP
2
DATA SCREEN
3
MENU
MENU
▸ MODE SET
CUSTOM PRESET
DEMONSTRATION
4
MENU
MODE SET
▸ CUSTOM PRESET
DEMONSTRATION
5
EXECUTE
CUSTOM PRESET
▸ CONTRAST
COLOR
SHARPNESS
HUE
RESET
6
CUSTOM PRESET
CONTRAST
COLOR
SHARPNESS
▸ HUE
RESET
7
<
>

Operation

(AA-2)

1 **Set the POWER switch to CAMERA and slide the STANDBY switch up.**
The camcorder enters the recording standby mode.
In order to adjust the picture precisely, adjust the focus and white balance manually.

2 **Press DATA SCREEN to display the CUSTOM PRESET menu indication in the viewfinder on the TV or monitor screen.**

3 **Press MENU.**

4 **Press ∨ and move cursor to CUSTOM PRESET.**

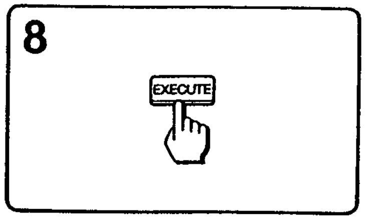
5 **Press EXECUTE.**
The CUSTOM PRESET menu is displayed.

6 **Press ∨ and move cursor to the item to be adjusted.**
Each press of ∨ moves the cursor to the item below. When the cursor is at RESET, press ∨ again to move the cursor to CONTRAST.

7 **Press < or > to adjust the picture shot by the camera by monitoring it on the TV or monitor screen.**
Three steps each from the standard position can be selected.

Parameter	Function	◄– ▼ +►	
CONTRAST	To adjust the brightness	Darker	Brighter
COLOR	To adjust the color intensity	Lighter	Darker
SHARPNESS	To sharpen the outline	Softer	Sharper
HUE	To adjust the hue	Purplish	Greenish

Continued on the next page



8 **Check the cursor is not set to RESET and press EXECUTE.**
The CUSTOM PRESET menu is cleared and the new setting is stored in the memory.

To record in the setting made in the CUSTOM PRESET menu

1 **Set the camcorder in the recording pause mode.**

2 **Call up the MODE SET menu referring to page 52.**

3 **Select "CUSTOM MODE ON".**

4 **Press EXECUTE.**

5 **Set the AUTO LOCK switch down.**
The CP (custom preset mode) indication is displayed in the viewfinder.

6 **Press START/STOP to start recording.**

After recording
Reset the AUTO LOCK switch to AUTO LOCK. The CP indication disappears, but the settings of the parameters remain.

To return to the standard setting
Set cursor to RESET in step 8 of "Operation" and press EXECUTE.
The CUSTOM PRESET menu is cleared. All of the parameters will be at the standard position the next time it is called up.

Note
The effect of the CUSTOM PRESET function may not be apparent depending upon the brightness, pattern, and color of the subject.

Editing onto Another VCR

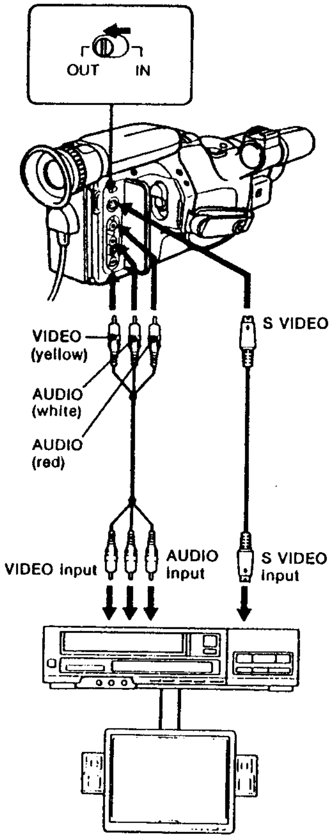
You can create your own video program by editing with any other 8 mm, Betamax, or VHS format VCR.

Before You Begin

(BB)

- Make connections using the supplied A/V connecting cable for stereo equipment.
  For monaural equipment, connect only the white plug for audio.
- Use of the supplied AC power adaptor is recommended.
- Set the IN/OUT selector on the camcorder to OUT.
- Select "EDIT ON" in the MODE SET menu. See page 50.
- Press DATA SCREEN to clear the indication from the viewfinder. Otherwise, the indication will be recorded together with the picture on the recording VCR.
- Set the input selector of the VCR to LINE, if available.

(BB)



Operation

1 **Insert a tape for recording into the recording VCR.**

2 **Set the POWER switch on the camcorder to VTR and insert a source tape.**

3 **Playback the tape on the camcorder and locate the editing start point. Then set the camcorder to the playback pause mode.**

4 **Playback the tape on the recording VCR and locate the recording start point. Then set the VCR to the recording pause mode.**

5 **Release the pause mode on both VCRs.**
Editing starts.

To stop editing momentarily
Press ❚❚ on the recording VCR.

To edit more scenes
Repeat steps 3 to 5.

To stop editing
Press ■ on both VCR.

To record a title
Use the camcorder as a player. Playback the tape and call up the title in the desired mode. The played back picture will be recorded on the recording VCR with the title superimposed. For details on the title, refer to pages 64 to 73.

Note on edit function
When using the camcorder as the playback VCR, selecting the "EDIT ON" in the MODE SET menu activates the edit function. Picture deterioration resulting from editing can be kept to the minimum. However, avoid using the edited tape for multiple generations of editing.
Deactivate the edit function when not editing.

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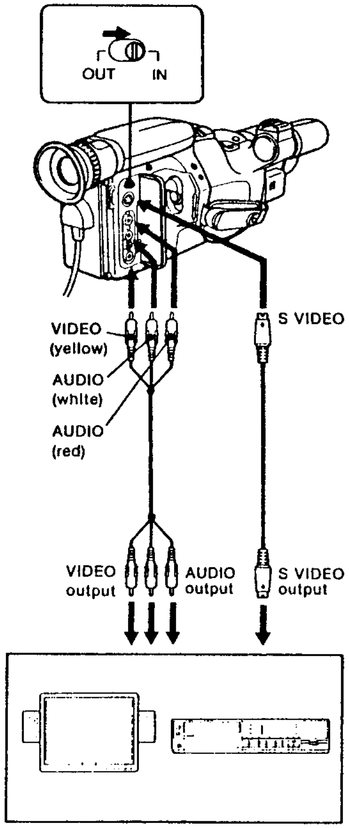
Recording from Another VCR or a TV

(CC)



You can record a TV program from the TV, or a tape played back on another VCR that is equipped with audio/video outputs.

Before You Begin

(CC)

- Make connections using the supplied A/V connecting cable for stereo equipment.
  For monaural equipment, connect only the white plug for audio.
- Set the IN/OUT selector on the camcorder to IN.

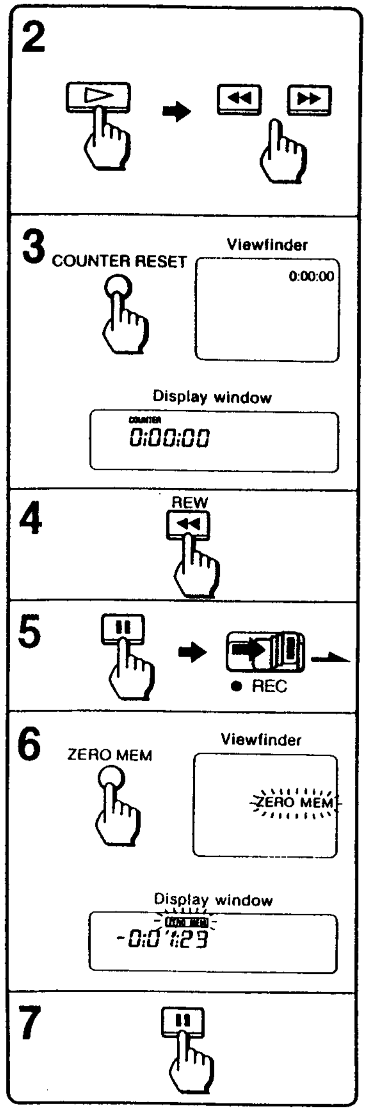
Operation

1. **Turn on the TV or VCR.**
2. **Select the TV channel or play back the tape to be recorded.**
3. **Set the POWER switch on the camcorder to VTR.**
4. **Insert a tape and slide ● REC.**
   Recording starts.
   The picture being recorded can be monitored in the viewfinder as well as on the TV screen.

What to choose for Hi8 recording
Select "Hi8 AUTO" in the MODE SET menu.
Recording in the Hi8 mode will be performed when a Hi8 tape Hi8 is used. When a standard tape 8 is used, recording is performed in the normal mode.

Notes on connection
- When the TV or the playback VCR is monaural, make connection only to the L jack.
  Recording will be made in monaural.
- When connection is made both to the VIDEO jack and the S VIDEO jack, the video signal fed from the S VIDEO jack has priority.

(DD)



Insert Recording

You can insert new scenes from a TV or a VCR onto your originally recorded tape.

Before You Begin

- Make the same connection explained in "Recording from Another VCR or a TV" (page 101).
- Set the IN/OUT selector on the camcorder to IN.

Operation

(DD)

1 **Follow steps 1 to 3 in "Recording from Another VCR or a TV – Operation".**

2 **Play back the tape in the camcorder and locate the point where the insert should end by pressing ◀◀ or ▶▶.**

3 **Press COUNTER RESET at the end point.**
The counter is reset to "0:00:00".

4 **Rewind the tape in the camcorder and locate the point where the insert should begin.**

5 **Set the camcorder to the recording pause mode at the insert start point.**

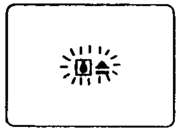
6 **Press ZERO MEM.**
The insert end point is stored in the memory as the "0:00:00" point.

7 **Release the pause mode of both units.**
Insert recording will start.
The picture being recorded can be monitored in the viewfinder as well as on the TV screen.

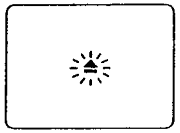
8 **The insert recording will stop automatically around the counter zero point.**

To change the end point of the edit
Press ZERO MEM so that the ZERO MEM indication disappears. Start from step 2.

(EE-1)



(EE-2)



Notes and Precautions

Notes on Moisture Condensation

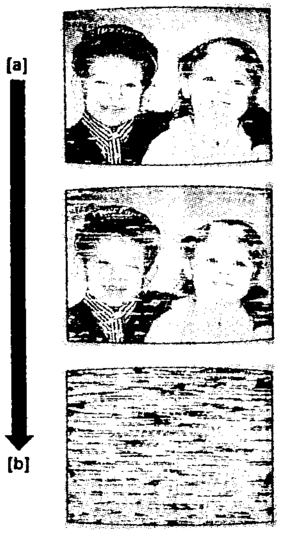
If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface or the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors.
However, take the following precautions.

If moisture condenses inside the unit
(EE-1)
Moisture is present inside the camcorder when the ◙ and ⏏ indication in the viewfinder blinks. In this case, no function except for tape ejection will work.
Eject the tape, turn off the camcorder, and leave it with the cassette holder open for at least 1 hour.
The camcorder can be used again if the ◙ and ⏏ indication does not appear when the power is turned on again. (⏏ indication appears only when a tape is inserted.)

If moisture condenses on the surface of the tape
(EE-2)
If moisture is present on the surface of the tape when the tape is inserted and a tape transport button (▷, ◀◀, etc.) is pressed, the ⏏ indication blinks inside the viewfinder.
In such case, no function except for tape ejection will work.
Eject the tape and let it sit for at least 1 hour.
The tape can be used again if the ⏏ indication does not appear when the tape is inserted and a tape transport button is pressed.

If moisture condenses on the lens
No caution indications will appear, but the picture becomes dim.
Turn off the power and leave the camcorder unused for at least 1 hour.

(EE-3)



Notes on Video Head Cleaning

To ensure clear picture, clean the video heads periodically.
When playback, pictures are noisy or hardly visible, the video heads may be contaminated. **(EE-3)**
[a] Slight contamination
[b] Critical contamination
In such cases,

1. **Clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied), referring to its instructions.**
2. **After cleaning, check if the picture is clear by recording or playing back with an ordinary tape.**
3. **If the picture is still noisy, repeat cleaning. (Do not repeat cleaning more than 5 times).**

Caution
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

Note
If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Precautions

On operation
- Operate the camcorder on 6.0 V (battery pack), 7.5 V (AC power adaptor), or 9.0 V (alkaline batteries).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid fall into the casing, unplug the camcorder and have it checked by qualified personnel before operating it any further.
- Do not hold the camcorder by the viewfinder or the microphone.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the lens cap on the lens when not using the camera.
- Do not wrap the camcorder and operate it because heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not put the camcorder on the sand.

On care
- When the unit will not be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera section and player section and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on it, wipe them off with a soft cloth.
  Clean the camcorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Note on copyright
Televison programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Using Your Camcorder Abroad

Each country has its own electricity system and TV color system. Before using your camcorder abroad, check the following points.

Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60Hz.

Difference in Color Systems

You can view the playback picture in the viewfinder. However, if you want to view the playback picture on a TV, it must be a NTSC system-based TV.

NTSC system countries
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, The Philippines, U.S.A., Venezuela, etc.

PAL system countries
Australia, Austria, Belgium, China, Denmark, Finland, Germany (Former West Germany), Great Britain, Holland, Hong Kong, Italy, Kuwait, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system countries
Brazil

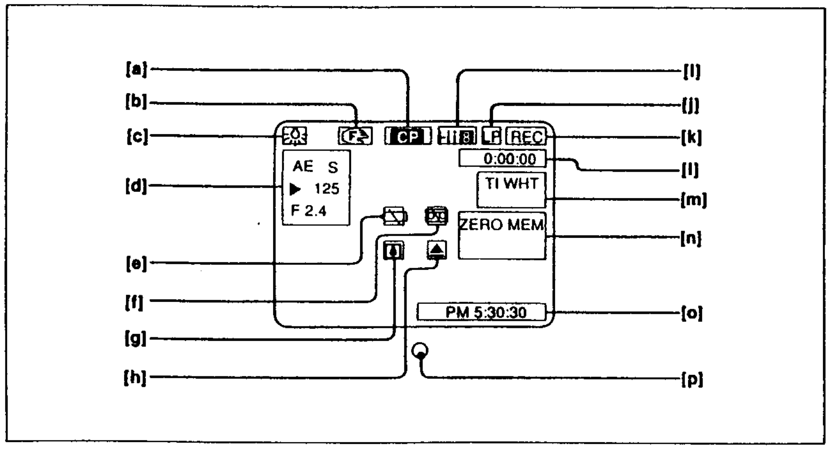
PAL-N system countries
Argentina, Paraguay, Uruguay

SECAM system countries
Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Soviet Union, etc.

Indications in the Viewfinder and the Display Window

Indications in the Viewfinder

(FF-1)


[a]
[b]
[c]
[d]
[e]
[f]
[g]
[h]
[i]
[j]
[k]
[l]
[m]
[n]
[o]
[p]
CP
Hi8
LP
REC
AE S
▶ 125
F 2.4
0:00:00
TI WHT
ZERO MEM
PM 5:30:30

(FF-1)

- [a] Custom preset mode indication
- [b] Manual focus mode indication
- [c] White balance mode indication
- [d] Fader and programmed AE indication
- [e] Battery indication
- [f] Tape indication
- [g] Moisture condensation indication
- [h] Head clog and caution indication
- [i] Hi8 mode indication
- [j] LP mode indication
- [k] Tape operation mode, camera operation mode indication
- [l] Tape counter indication
- [m] Title number, color, and mode indication
- [n] Zero memory mode indication
- [o] Date and time
- [p] Camera recording lamp

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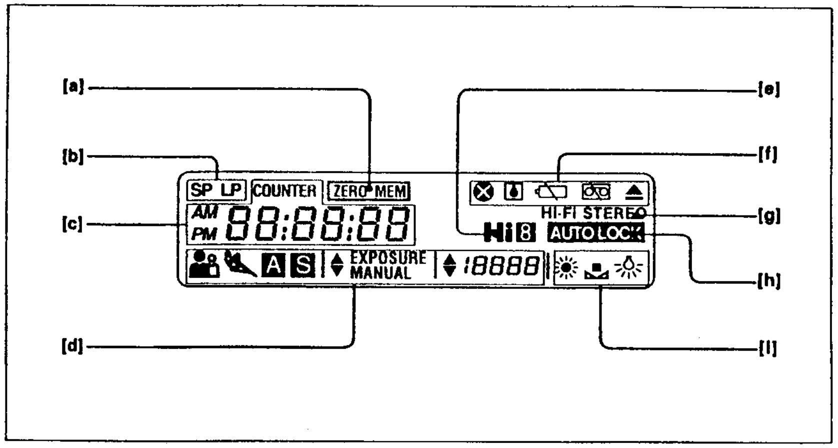
Indications in the Display Window

(FF-2)


[a]
[b]
[c]
[d]
[e]
[f]
[g]
[h]
[i]
SP LP
COUNTER
ZERO MEM
AM
PM
88:88:88
HI-FI STEREO
Hi8
AUTO LOCK
A
S
EXPOSURE
MANUAL
18888

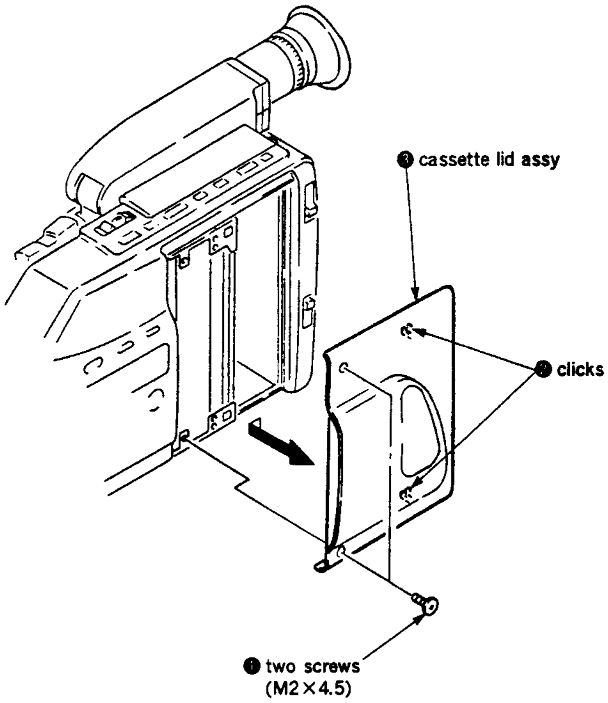
(FF-2)

- [a] Zero memory mode indication
- [b] Tape speed indication
- [c] Time, date, and tape counter indication
- [d] Programmed AE and manual mode indications
- [e] Hi8 mode indication
- [f] Caution indication
- [g] Hi-fi stereo mode indication
- [h] Auto-lock indication
  Appears in the automatic adjusting mode.
- [i] White balance mode indication

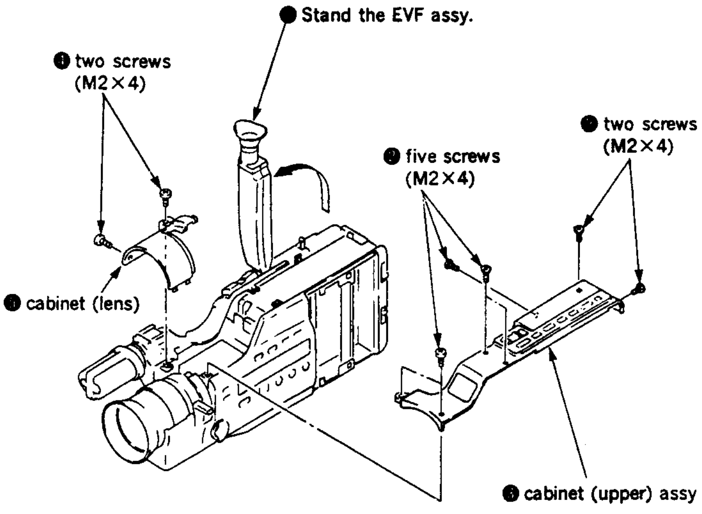
SECTION 2
DISASSEMBLY

2-1. REMOVAL OF CASSETTE LID ASSY

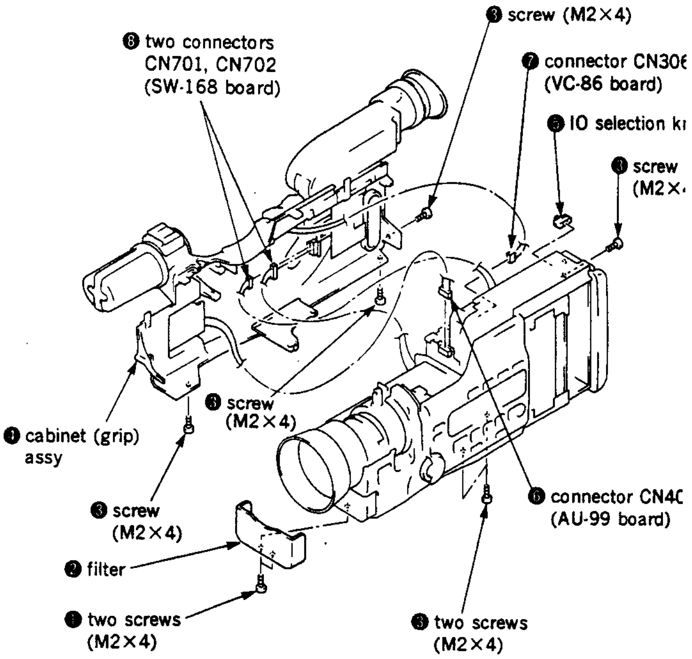
Note: When mounting, fit the clicks ❷ into holes completely, then clamp two screws ❶.


❸ cassette lid assy
❷ clicks
❶ two screws (M2×4.5)

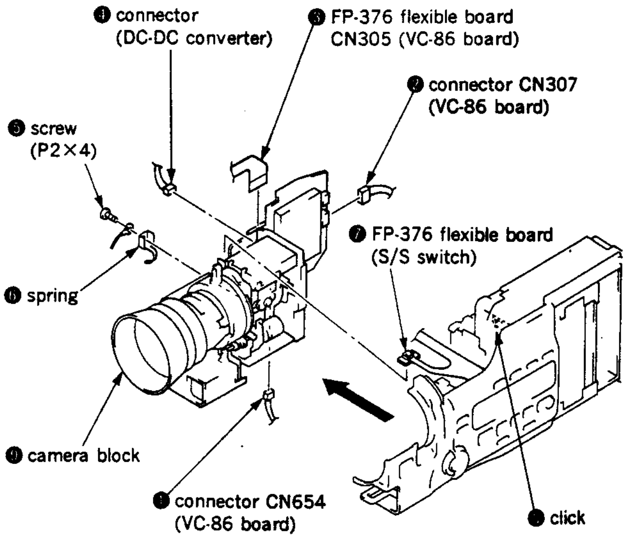
2-2. REMOVAL OF CABINET (UPPER, LENS) ASSY


❸ Stand the EVF assy.
❶ two screws (M2×4)
❷ cabinet (lens)
❹ two screws (M2×4)
❺ five screws (M2×4)
❻ cabinet (upper) assy

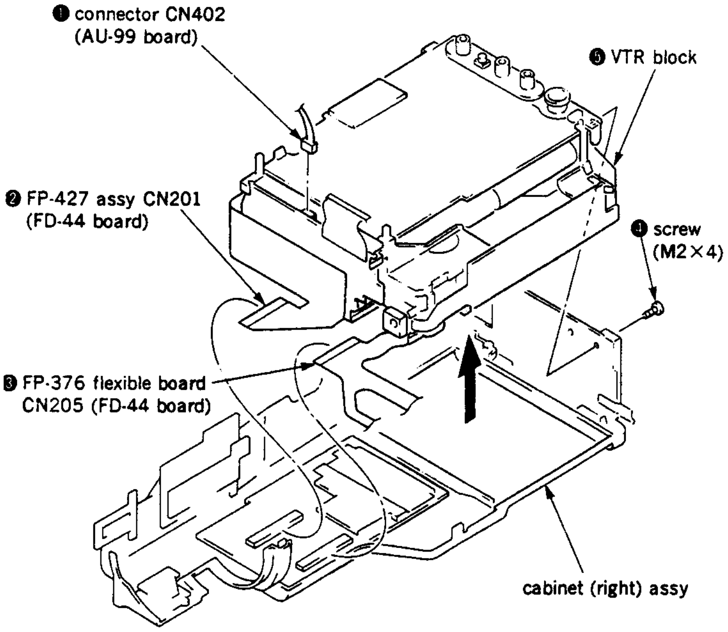
2-3. REMOVAL OF CABINET (GRIP) ASSY


❸ screw (M2×4)
❽ two connectors CN701, CN702 (SW-168 board)
❼ connector CN30
(VC-86 board)
❺ IO selection k
❸ screw (M2×
❹ cabinet (grip) assy
❸ screw (M2×4)
❸ screw (M2×4)
❻ connector CN4
(AU-99 board)
❷ filter
❶ two screws (M2×4)
❸ two screws (M2×4)

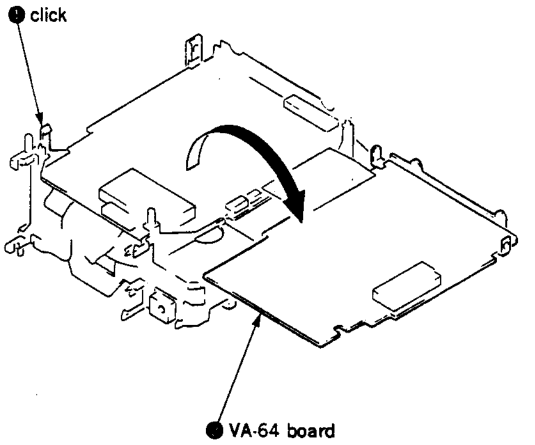
2-4. REMOVAL OF CAMERA BLOCK


❹ connector (DC-DC converter)
❸ FP-376 flexible board CN305 (VC-86 board)
❷ connector CN307 (VC-86 board)
❺ screw (P2×4)
❼ FP-376 flexible board (S/S switch)
❻ spring
❾ camera block
❶ connector CN654 (VC-86 board)
❽ click

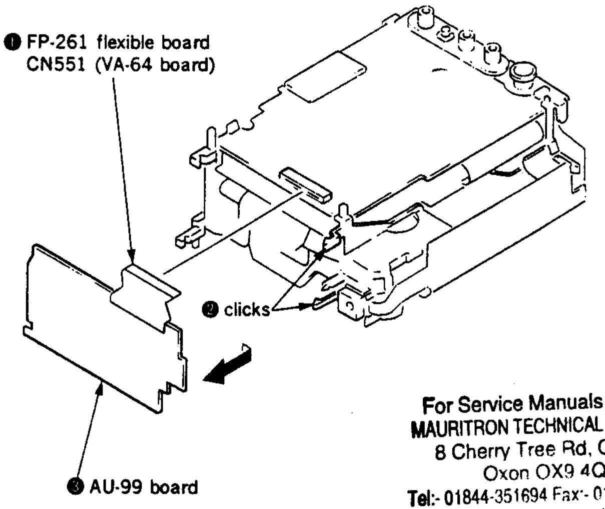
2-5. REMOVAL OF VTR BLOCK


❶ connector CN402
(AU-99 board)
❺ VTR block
❷ FP-427 assy CN201
(FD-44 board)
❹ screw
(M2×4)
❸ FP-376 flexible board
CN205 (FD-44 board)
cabinet (right) assy

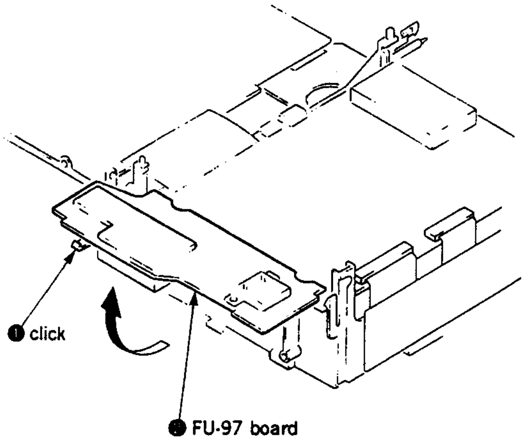
2-7. OPENING OF VA-64 BOARD


❶ click
❷ VA-64 board

2-6. REMOVAL OF AU-99 BOARD


❶ FP-261 flexible board
CN551 (VA-64 board)
❷ clicks
❸ AU-99 board

2-8. OPENING OF FU-97 BOARD


❶ click
❷ FU-97 board

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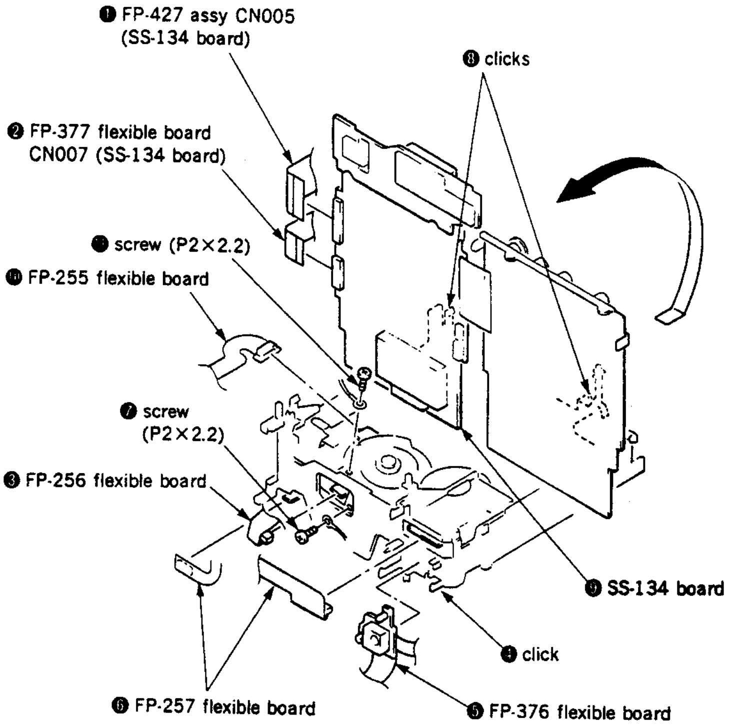
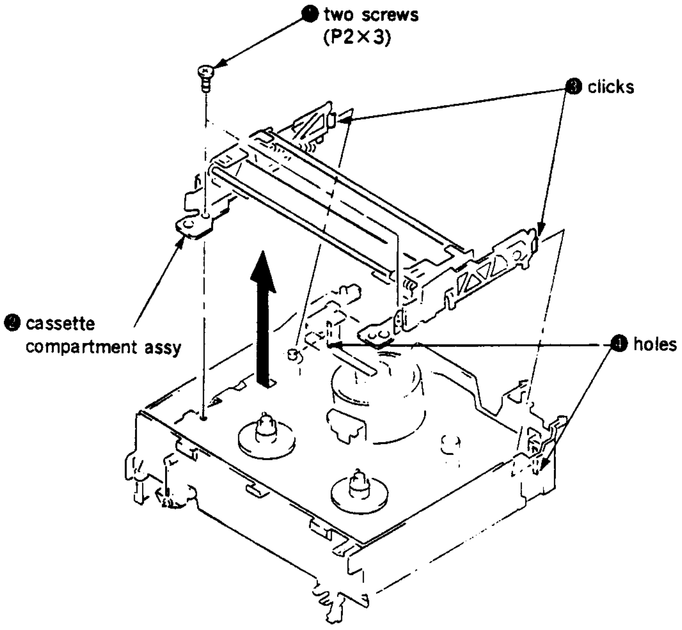
2-9. REMOVAL OF SS-134 BOARD

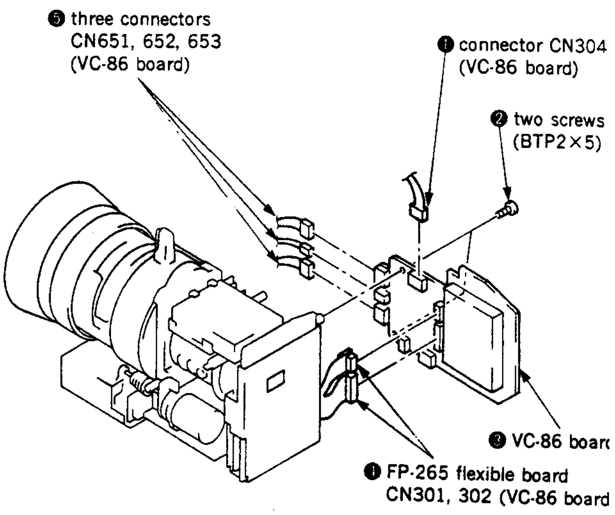

❶ FP-427 assy CN005 (SS-134 board)
❽ clicks
❷ FP-377 flexible board CN007 (SS-134 board)
⓫ screw (P2×2.2)
❿ FP-255 flexible board
❼ screw (P2×2.2)
❸ FP-256 flexible board
❾ SS-134 board
❹ click
❻ FP-257 flexible board
❺ FP-376 flexible board

2-10. REMOVAL OF CASSETTE COMPARTMENT ASSY

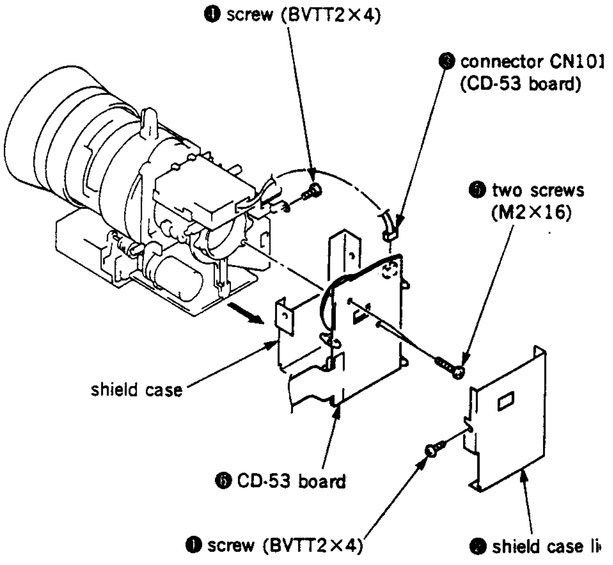
Note: When mounting, fit the clicks ❸ into completely, then clamp two screws ❶.


❶ two screws (P2×3)
❸ clicks
❷ cassette compartment assy
❹ holes

2-11. REMOVAL OF VC-86 BOARD

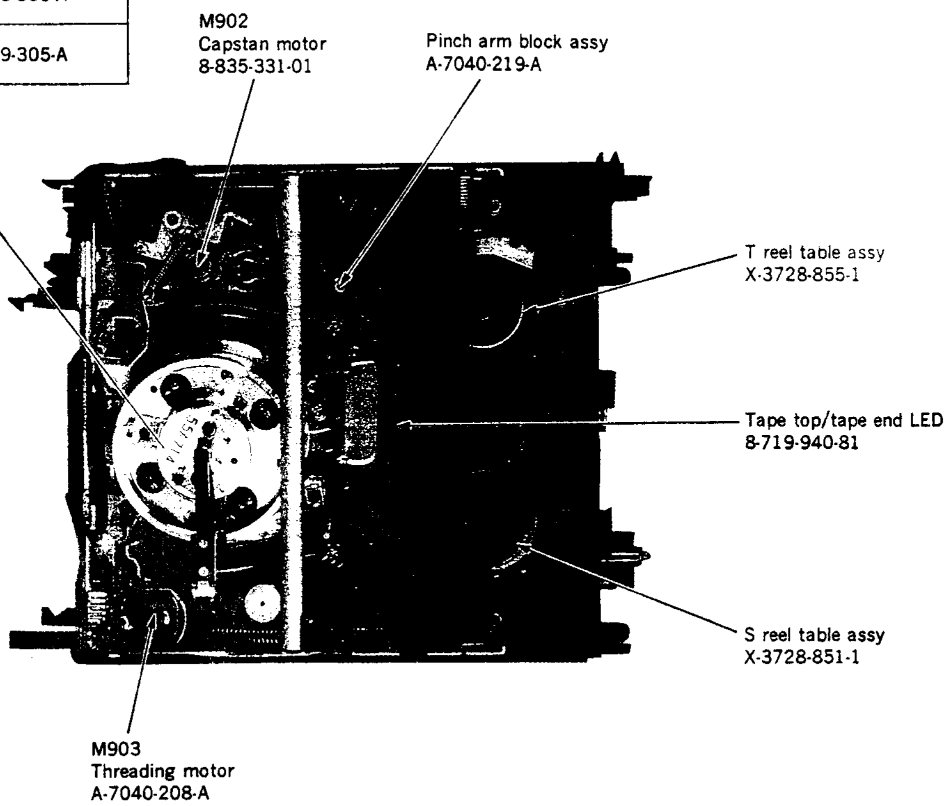

❺ three connectors CN651, 652, 653 (VC-86 board)
❹ connector CN304 (VC-86 board)
❷ two screws (BTP2×5)
❸ VC-86 boar
❶ FP-265 flexible board CN301, 302 (VC-86 board

2-12. REMOVAL OF CD-53 BOARD


❹ screw (BVTT2×4)
❸ connector CN101
(CD-53 board)
❺ two screws (M2×16)
shield case
❻ CD-53 board
❶ screw (BVTT2×4)
❷ shield case li

2-13. INTERNAL VIEWS

Drum assy (DGU-55A-R)	A-7048-355-A
Upper drum assy (DGR-55-R)	A-7049-305-A


M902
Capstan motor
8-835-331-01
Pinch arm block assy
A-7040-219-A
T reel table assy
X-3728-855-1
Tape top/tape end LED
8-719-940-81
S reel table assy
X-3728-851-1
M903
Threading motor
A-7040-208-A

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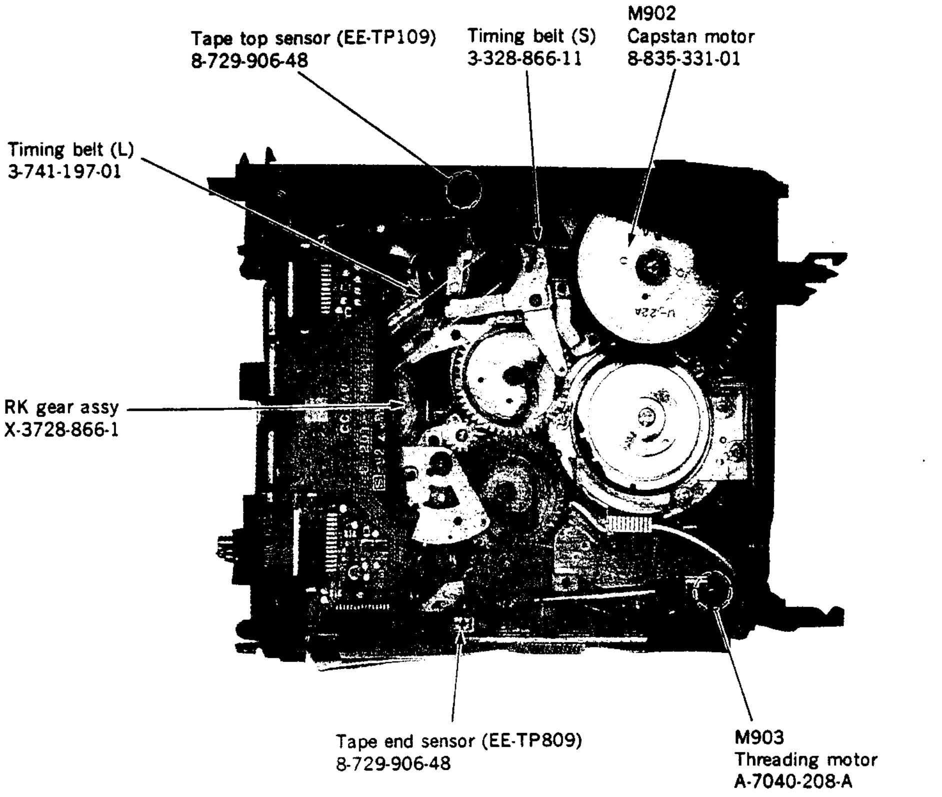
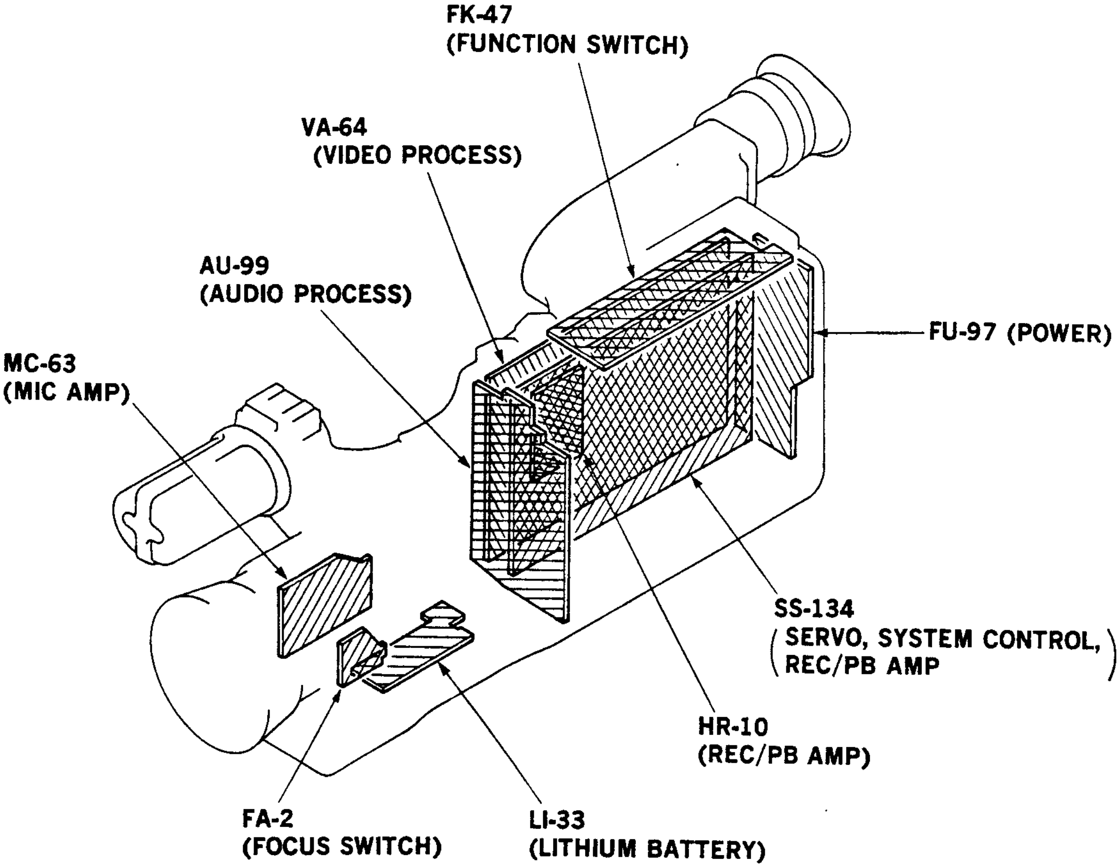
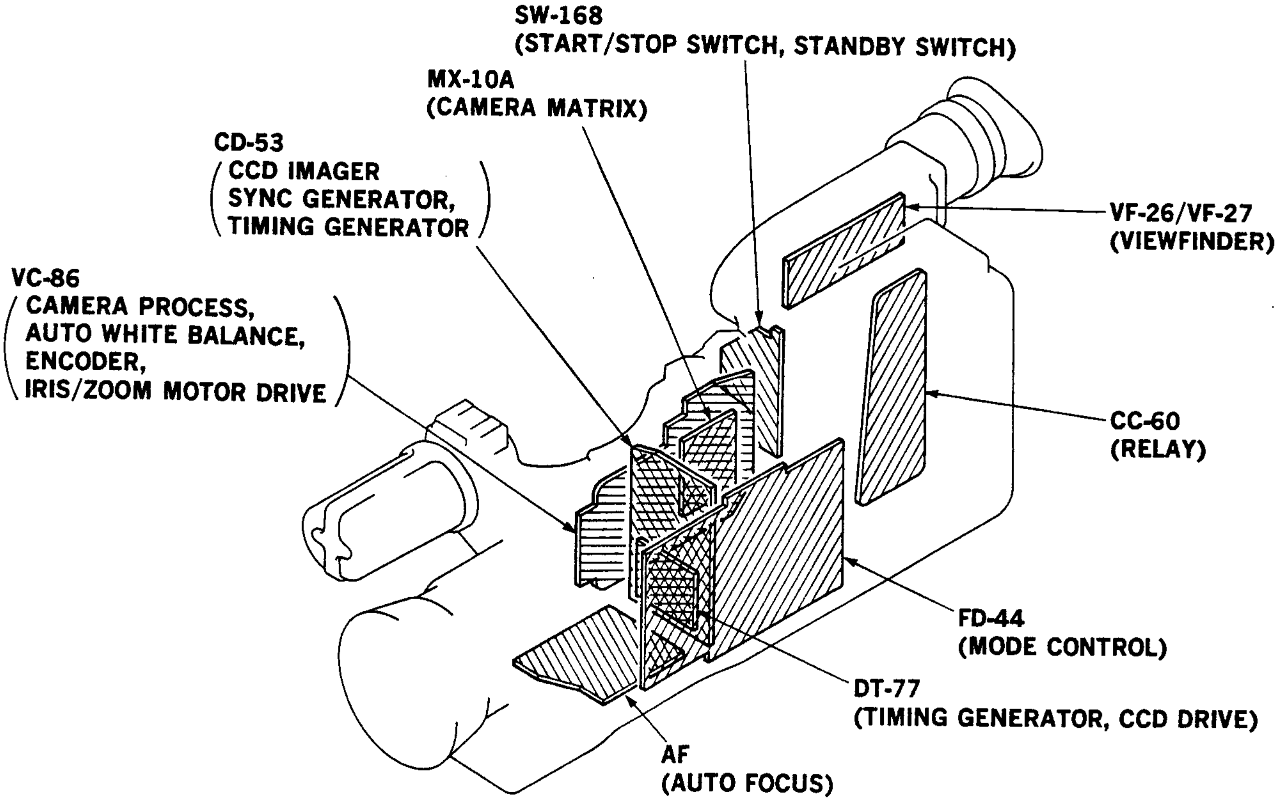

Tape top sensor (EE-TP109)
8-729-906-48
Timing belt (S)
3-328-866-11
M902
Capstan motor
8-835-331-01
Timing belt (L)
3-741-197-01
RK gear assy
X-3728-866-1
Tape end sensor (EE-TP809)
8-729-906-48
M903
Threading motor
A-7040-208-A

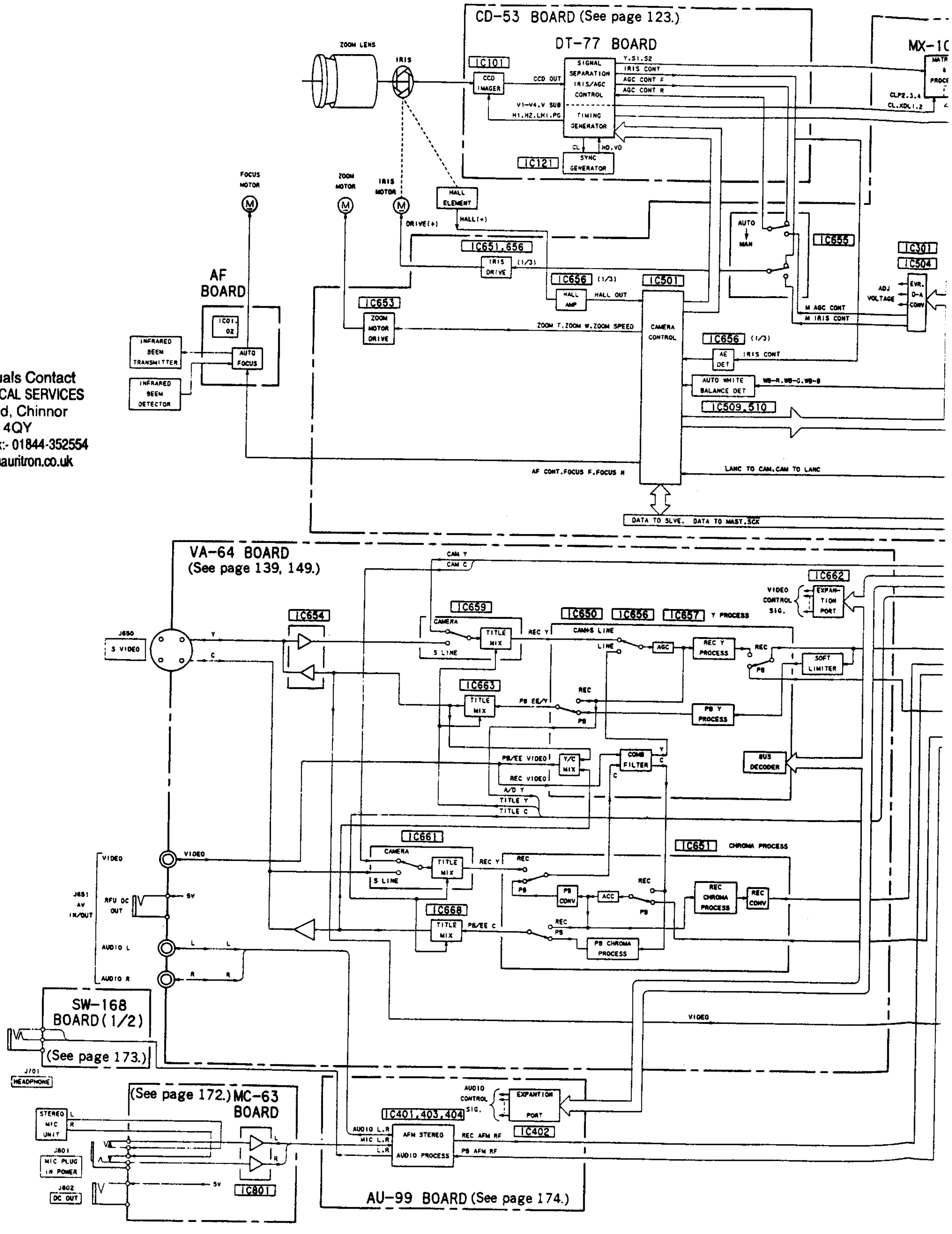
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION


FK-47
(FUNCTION SWITCH)
VA-64
(VIDEO PROCESS)
AU-99
(AUDIO PROCESS)
MC-63
(MIC AMP)
FU-97 (POWER)
SS-134
(SERVO, SYSTEM CONTROL, REC/PB AMP)
HR-10
(REC/PB AMP)
FA-2
(FOCUS SWITCH)
LI-33
(LITHIUM BATTERY)


SW-168
(START/STOP SWITCH, STANDBY SWITCH)
MX-10A
(CAMERA MATRIX)
CD-53
(CCD IMAGER
SYNC GENERATOR,
TIMING GENERATOR)
VC-86
(CAMERA PROCESS,
AUTO WHITE BALANCE,
ENCODER,
IRIS/ZOOM MOTOR DRIVE)
VF-26/VF-27
(VIEWFINDER)
CC-60
(RELAY)
FD-44
(MODE CONTROL)
DT-77
(TIMING GENERATOR, CCD DRIVE)
AF
(AUTO FOCUS)

3-2. OVERALL BLOCK DIAGRAM


CD-53 BOARD (See page 123.)
DT-77 BOARD
MX-1(
ZOOM LENS
IRIS
IC101
CCD IMAGER
CCD OUT
SIGNAL SEPARATION IRIS/AGC CONTROL
TIMING GENERATOR
Y.S1.S2
IRIS CONT
AGC CONT F
AGC CONT R
V1–V4.V SUB
H1.H2.LH1.PG
CL
HD.VD
IC121
SYNC GENERATOR
MATR & PROCE
CLP2.3.4
CL.XDL1.2
FOCUS MOTOR
ZOOM MOTOR
IRIS MOTOR
HALL ELEMENT
HALL(+)
DRIVE(+)
IC651,656
IRIS DRIVE
(1/3)
IC656
(1/3)
HALL AMP
HALL OUT
AUTO
MAN
IC655
IC301
IC504
ADJ VOLTAGE
EVR. D-A CONV
M AGC CONT
M IRIS CONT
AF BOARD
IC01, 02
AUTO FOCUS
INFRARED BEEM TRANSMITTER
INFRARED BEEM DETECTOR
IC653
ZOOM MOTOR DRIVE
ZOOM T.ZOOM W.ZOOM SPEED
IC501
CAMERA CONTROL
IC656
(1/3)
AE DET
IRIS CONT
AUTO WHITE BALANCE DET
WB-R.WB-G.WB-B
IC509.510
AF CONT.FOCUS F.FOCUS N
LANC TO CAM.CAM TO LANC
DATA TO SLVE. DATA TO MAST.SCK
VA-64 BOARD
(See page 139, 149.)
CAM Y
CAM C
IC662
VIDEO CONTROL SIG.
EXPAN-TION PORT
J650
S VIDEO
Y
C
IC654
IC659
CAMERA
S LINE
TITLE MIX
REC Y
IC650
IC656
IC657
Y PROCESS
CAM+S LINE
LINE
AGC
REC Y PROCESS
REC
PB
SOFT LIMITER
IC663
TITLE MIX
PB EE/Y
REC
PB
PB Y PROCESS
PB/EE VIDEO
REC VIDEO
Y/C MIX
COMB FILTER
Y
C
C
BUS DECODER
A/D Y
TITLE Y
TITLE C
IC661
CAMERA
S LINE
TITLE MIX
REC Y
REC
PB
IC651
CHROMA PROCESS
PB CONV
ACC
REC
PB
REC CHROMA PROCESS
REC CONV
IC668
TITLE MIX
PB/EE C
REC
PB
PB CHROMA PROCESS
J651 AV IN/OUT
VIDEO
VIDEO
RFU DC OUT
5V
AUDIO L
AUDIO R
L
L
R
R
VIDEO
SW-168 BOARD (1/2)
(See page 173.)
J701
HEADPHONE
(See page 172.) MC-63 BOARD
STEREO MIC UNIT
L
R
J801
MIC PLUG IN POWER
J802
DC OUT
5V
IC801
L
R
AUDIO CONTROL SIG.
EXPANTION PORT
IC401,403,404
AUDIO L.R
MIC L.R
L.R
AFM STEREO AUDIO PROCESS
REC AFM RF
PB AFM RF
IC402
AU-99 BOARD (See page 174.)

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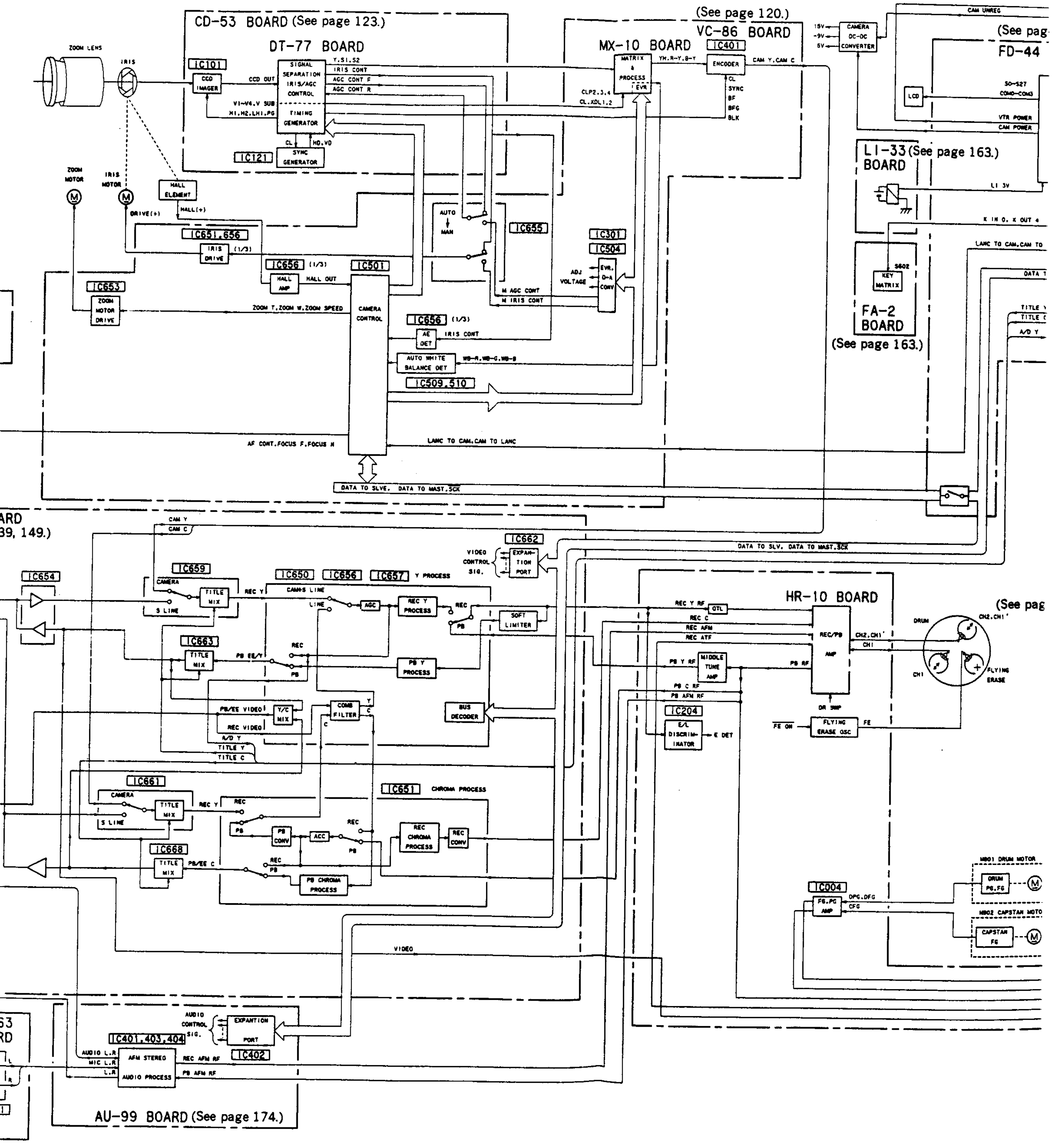
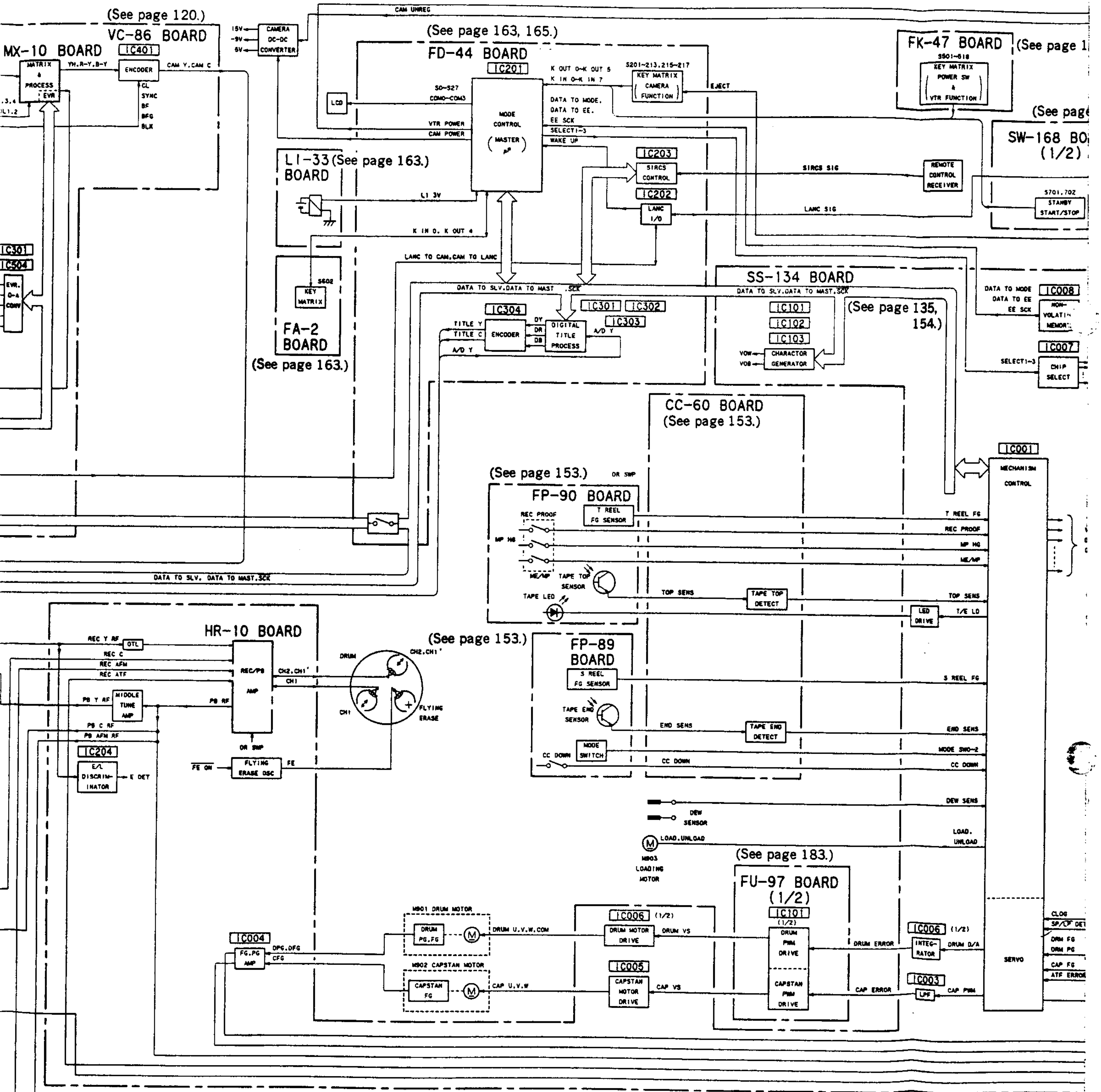

CD-53 BOARD (See page 123.)
DT-77 BOARD
ZOOM LENS
IRIS
IC101
CCD IMAGER
CCD OUT
SIGNAL SEPARATION IRIS/AGC CONTROL
TIMING GENERATOR
Y.S1.S2
IRIS CONT
AGC CONT F
AGC CONT R
V1-V4.V SUB
H1.H2.LH1.PG
CL
HD.VD
IC121
SYNC GENERATOR
(See page 120.)
VC-86 BOARD
MX-10 BOARD
IC401
MATRIX & PROCESS
EVR
YH.R-Y.B-Y
ENCODER
CAM Y.CAM C
CLP2.3.4
CL.XDL1.2
CL
SYNC
BF
BFG
BLK
15V
-9V
5V
CAMERA DC-DC CONVERTER
CAM UNREG
(See pag
FD-44
LCD
S0-S27
COM0-COM3
VTR POWER
CAM POWER
LI-33 (See page 163.)
BOARD
LI 3V
K IN 0. K OUT 4
LANC TO CAM.CAM TO
DATA T
S602
KEY MATRIX
FA-2 BOARD
(See page 163.)
TITLE Y
TITLE C
A/D Y
ZOOM MOTOR
IRIS MOTOR
M
HALL ELEMENT
HALL(+)
DRIVE(+)
IC651.656
IRIS DRIVE
(1/3)
AUTO
MAN
IC655
IC301
IC504
ADJ VOLTAGE
EVR. D-A CONV
IC656 (1/3)
HALL AMP
HALL OUT
IC501
CAMERA CONTROL
M AGC CONT
M IRIS CONT
IC653
ZOOM MOTOR DRIVE
ZOOM T.ZOOM W.ZOOM SPEED
IC656 (1/3)
AE DET
IRIS CONT
AUTO WHITE BALANCE DET
WB-R.WB-G.WB-B
IC509.510
AF CONT.FOCUS F.FOCUS N
LANC TO CAM.CAM TO LANC
DATA TO SLVE. DATA TO MAST.SCK
ARD
39, 149.)
CAM Y
CAM C
IC662
VIDEO CONTROL SIG.
EXPANTION PORT
DATA TO SLV. DATA TO MAST.SCK
IC654
IC659
CAMERA
S LINE
TITLE MIX
REC Y
IC650
IC656
IC657
Y PROCESS
CAM+S LINE
LINE
AGC
REC Y PROCESS
REC
PB
SOFT LIMITER
IC663
TITLE MIX
PB EE/Y
PB Y PROCESS
PB/EE VIDEO
Y/C MIX
COMB FILTER
Y
C
REC VIDEO
A/D Y
TITLE Y
TITLE C
BUS DECODER
HR-10 BOARD
(See pag
REC Y RF
QTL
REC C
REC AFM
REC ATF
REC/PB AMP
CH2.CH1'
CH1
DRUM
FLYING ERASE
PB Y RF
MIDDLE TUNE AMP
PB RF
PB C RF
PB AFM RF
IC204
E/L DISCRIMINATOR
E DET
DR SWP
FE ON
FLYING ERASE OSC
FE
IC661
CAMERA
S LINE
TITLE MIX
REC Y
REC
PB
IC651
CHROMA PROCESS
PB CONV
ACC
REC CHROMA PROCESS
REC CONV
IC668
TITLE MIX
PB/EE C
PB CHROMA PROCESS
M901 DRUM MOTOR
DRUM FG.PG
IC004
FG.PG AMP
DFG.DFG
CFG
M902 CAPSTAN MOTO
CAPSTAN FG
VIDEO
63
RD
AUDIO CONTROL SIG.
EXPANTION PORT
IC401.403.404
AUDIO L.R
MIC L.R
L.R
AFM STEREO AUDIO PROCESS
REC AFM RF
PB AFM RF
IC402
AU-99 BOARD (See page 174.)



(See page 120.)
VC-86 BOARD
MX-10 BOARD
IC401
MATRIX & PROCESS
EVR
ENCODER
CAM UNREG
CAMERA DC-DC CONVERTER
(See page 163, 165.)
FD-44 BOARD
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MODE CONTROL (MASTER µP)
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EJECT
LCD
VTR POWER
CAM POWER
L I-33 BOARD
(See page 163.)
IC203
SIRCS CONTROL
IC202
LANC I/O
SIRCS SIG
LANC SIG
REMOTE CONTROL RECEIVER
FK-47 BOARD
KEY MATRIX POWER SW & VTR FUNCTION
SW-168 BO (1/2)
STANBY START/STOP
KEY MATRIX
FA-2 BOARD
(See page 163.)
IC301
IC504
IC304
ENCODER
DIGITAL TITLE PROCESS
IC301
IC302
IC303
SS-134 BOARD
IC101
IC102
IC103
CHARACTOR GENERATOR
(See page 135, 154.)
IC008
NON-VOLATILE MEMORY
IC007
CHIP SELECT
DATA TO SLV. DATA TO MAST .SCK
CC-60 BOARD
(See page 153.)
IC001
MECHANISM CONTROL
(See page 153.)
FP-90 BOARD
T REEL FG SENSOR
REC PROOF
MP HS
ME/MP
TAPE TOP SENSOR
TAPE LED
TAPE TOP DETECT
LED DRIVE
T REEL FG
TOP SENS
T/E LD
HR-10 BOARD
REC/PB AMP
MIDDLE TUNE AMP
IC204
E/L DISCRIMINATOR
FLYING ERASE OSC
FE ON
DRUM
CH1
CH2
FLYING ERASE
(See page 153.)
FP-89 BOARD
S REEL FG SENSOR
TAPE END SENSOR
TAPE END DETECT
MODE SWITCH
CC DOWN
S REEL FG
END SENS
MODE SW0-2
DEW SENS
DEW SENSOR
M903 LOADING MOTOR
LOAD, UNLOAD
(See page 183.)
FU-97 BOARD (1/2)
IC101 (1/2)
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
M901 DRUM MOTOR
DRUM PG,FG
M902 CAPSTAN MOTOR
CAPSTAN FG
IC006 (1/2)
DRUM MOTOR DRIVE
IC005
CAPSTAN MOTOR DRIVE
IC004
FG,PG AMP
IC006 (1/2)
INTEGRATOR
IC003
LPF
DRUM ERROR
CAP ERROR
SERVO

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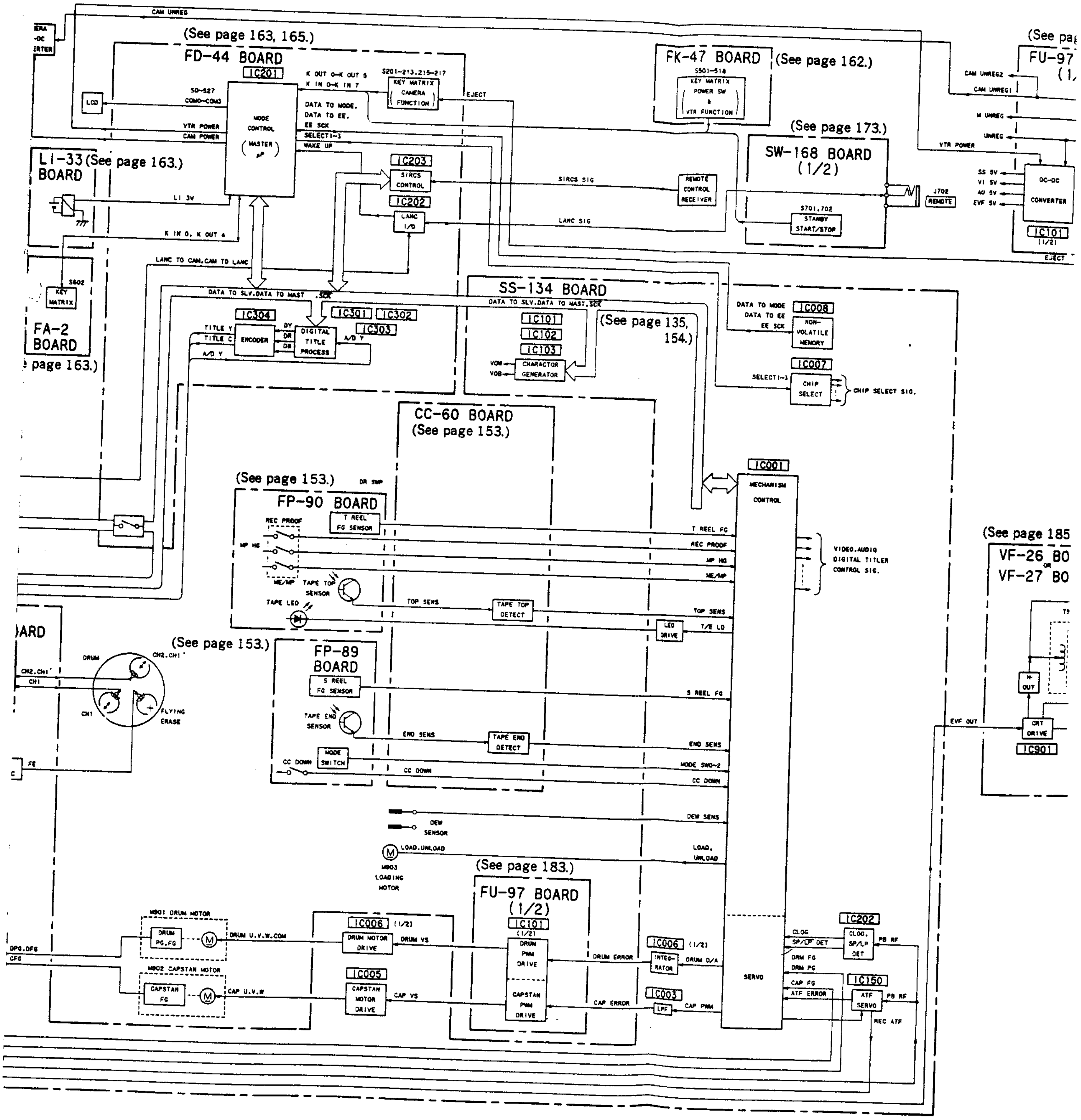
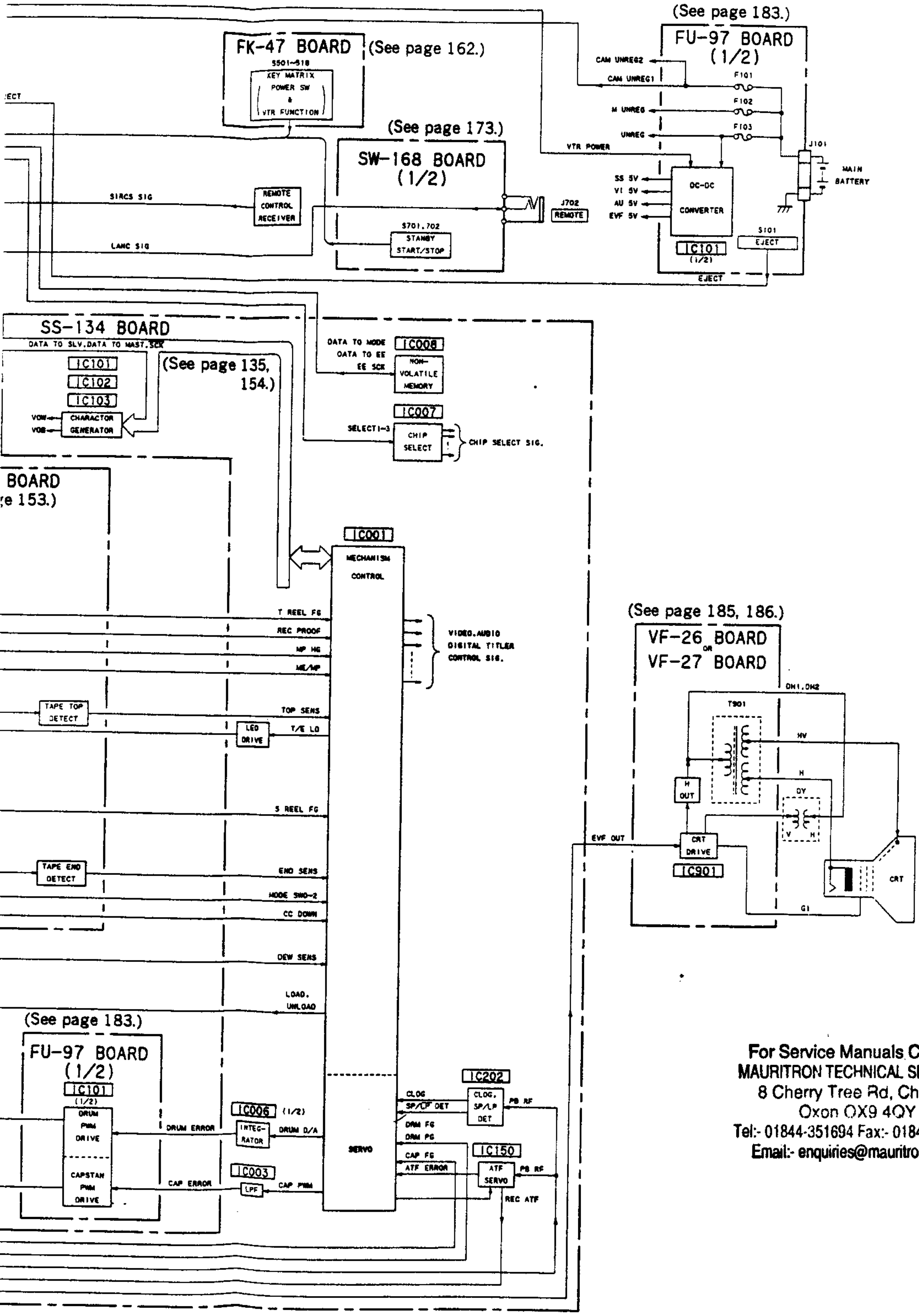

CAM UNREG
(See page 163, 165.)
FD-44 BOARD
IC201
LCD
S0-S27
COMO-COM3
MODE CONTROL
(MASTER μP)
VTR POWER
CAM POWER
K OUT 0-K OUT 5
K IN 0-K IN 7
S201-213,215-217
KEY MATRIX
CAMERA FUNCTION
EJECT
DATA TO MODE,
DATA TO EE,
EE SCK
SELECT1-3
WAKE UP
IC203
SIRCS CONTROL
IC202
LANC I/O
LI 3V
K IN 0, K OUT 4
LANC TO CAM,CAM TO LANC
LI-33 BOARD
(See page 163.)
S602
KEY MATRIX
FA-2 BOARD
page 163.)
DATA TO SLV,DATA TO MAST
SCK
IC304
IC301
IC302
IC303
TITLE Y
TITLE C
A/D Y
ENCODER
DY
DR
DB
DIGITAL TITLE PROCESS
A/D Y
FK-47 BOARD
(See page 162.)
S501-518
KEY MATRIX
POWER SW
&
VTR FUNCTION
(See page 173.)
SW-168 BOARD
(1/2)
SIRCS SIG
REMOTE CONTROL RECEIVER
LANC SIG
S701,702
STANBY START/STOP
J702
REMOTE
(See page
FU-97
(1/
CAM UNREG2
CAM UNREG1
M UNREG
UNREG
VTR POWER
SS 5V
VI 5V
AU 5V
EVF 5V
DC-DC CONVERTER
IC101
(1/2)
EJECT
SS-134 BOARD
DATA TO SLV,DATA TO MAST,SCK
IC101
IC102
IC103
(See page 135, 154.)
VOM
VOB
CHARACTOR GENERATOR
DATA TO MODE
DATA TO EE
EE SCK
IC008
NON-VOLATILE MEMORY
SELECT1-3
IC007
CHIP SELECT
CHIP SELECT SIG.
CC-60 BOARD
(See page 153.)
(See page 153.)
DR SWP
FP-90 BOARD
REC PROOF
T REEL FG SENSOR
MP HG
ME/MP
TAPE TOP SENSOR
TAPE LED
TOP SENS
TAPE TOP DETECT
LED DRIVE
IC001
MECHANISM CONTROL
T REEL FG
REC PROOF
MP HG
ME/MP
TOP SENS
T/E LD
VIDEO,AUDIO DIGITAL TITLER CONTROL SIG.
(See page 185
VF-26 BO
OR
VF-27 BO
H-OUT
EVF OUT
CRT DRIVE
IC901
ARD
(See page 153.)
DRUM
CH2.CH1
CH2,CH1
CH1
CH1
FLYING ERASE
FE
FP-89 BOARD
S REEL FG SENSOR
TAPE END SENSOR
END SENS
TAPE END DETECT
CC DOWN
MODE SWITCH
CC DOWN
S REEL FG
END SENS
MODE SWO-2
CC DOWN
DEW SENSOR
DEW SENS
M
LOAD,UNLOAD
M903 LOADING MOTOR
LOAD, UNLOAD
(See page 183.)
FU-97 BOARD
(1/2)
IC101
(1/2)
M901 DRUM MOTOR
DRUM PG,FG
M
DRUM U,V,W,COM
IC006 (1/2)
DRUM MOTOR DRIVE
DRUM VS
DRUM PWM DRIVE
DRUM ERROR
IC006 (1/2)
INTEG-RATOR
DRUM D/A
DPG,DFG
CFG
M902 CAPSTAN MOTOR
CAPSTAN FG
M
CAP U,V,W
IC005
CAPSTAN MOTOR DRIVE
CAP VS
CAPSTAN PWM DRIVE
CAP ERROR
IC003
LPF
CAP PWM
SERVO
CLOG
SP/LP DET
DRM FG
DRM PG
CAP FG
ATF ERROR
IC202
CLOG, SP/LP DET
PB RF
IC150
ATF SERVO
PB RF
REC ATF


(See page 183.)
FU-97 BOARD
(1/2)
CAM UNREG2
CAM UNREG1
F101
F102
F103
M UNREG
UNREG
VTR POWER
J101
MAIN
BATTERY
SS 5V
VI 5V
AU 5V
EVF 5V
DC-DC
CONVERTER
IC101
(1/2)
S101
EJECT
EJECT
FK-47 BOARD
(See page 162.)
S501~518
KEY MATRIX
POWER SW
&
VTR FUNCTION
ECT
(See page 173.)
SW-168 BOARD
(1/2)
J702
REMOTE
SIRCS SIG
REMOTE
CONTROL
RECEIVER
LANC SIG
S701, 702
STANBY
START/STOP
SS-134 BOARD
DATA TO SLV, DATA TO MAST, SCK
IC101
IC102
IC103
(See page 135,
154.)
VOW
VOB
CHARACTOR
GENERATOR
DATA TO MODE
DATA TO EE
EE SCK
IC008
NON-
VOLATILE
MEMORY
IC007
SELECT1~3
CHIP
SELECT
CHIP SELECT SIG.
BOARD
e 153.)
IC001
MECHANISM
CONTROL
T REEL FG
REC PROOF
MP HG
ME/MP
VIDEO, AUDIO
DIGITAL TITLER
CONTROL SIG.
TAPE TOP
DETECT
TOP SENS
LED
DRIVE
T/E LD
S REEL FG
TAPE END
DETECT
END SENS
MODE SW0-2
CC DOWN
DEW SENS
LOAD,
UNLOAD
(See page 183.)
FU-97 BOARD
(1/2)
IC101
(1/2)
DRUM
PWM
DRIVE
CAPSTAN
PWM
DRIVE
DRUM ERROR
IC006
(1/2)
INTEG-
RATOR
DRUM D/A
CAP ERROR
IC003
LPF
CAP PWM
SERVO
IC202
CLOG
SP/LP DET
CLOG,
SP/LP
DET
PB RF
DRM FG
DRM PG
CAP FG
ATF ERROR
IC150
ATF
SERVO
PB RF
REC ATF
EVF OUT
(See page 185, 186.)
VF-26 BOARD
OR
VF-27 BOARD
DH1, DH2
T901
HV
H
H
OUT
DY
V
H
CRT
DRIVE
IC901
CRT
G1

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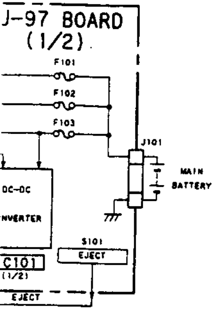
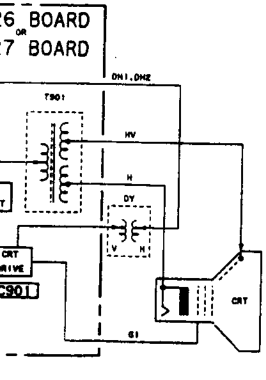

J–97 BOARD
(1/2)
F101
F102
F103
J101
MAIN
BATTERY
DC–DC
NVERTER
S101
EJECT
C101
(1/2)
EJECT

ge 185, 186.)


26 BOARD
OR
27 BOARD
DH1, DH2
T901
HV
H
DY
V
H
CRT
RIVE
C901
CRT
G1

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3-3. CAMERA (1) BLOCK DIAGRAM

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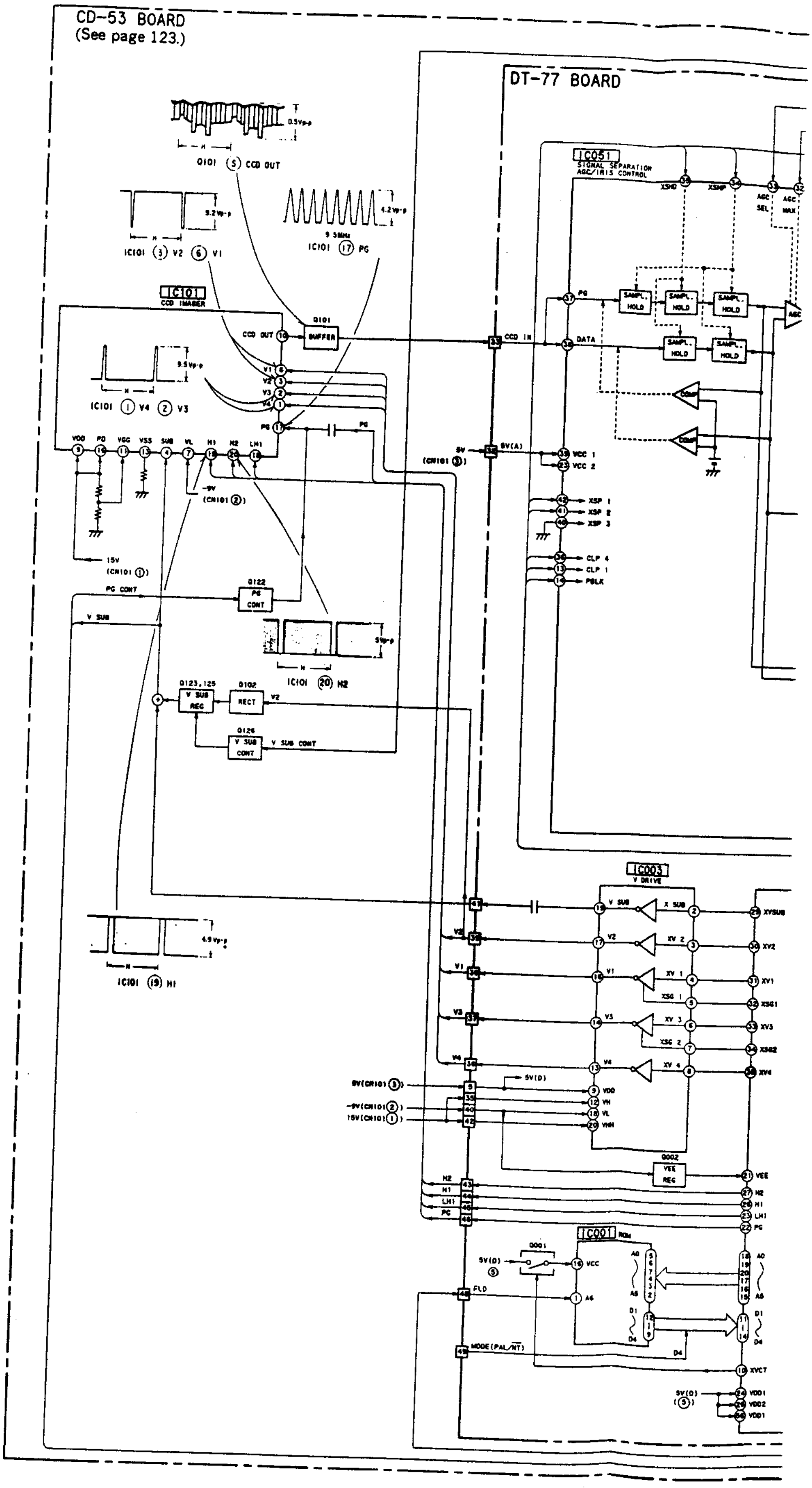
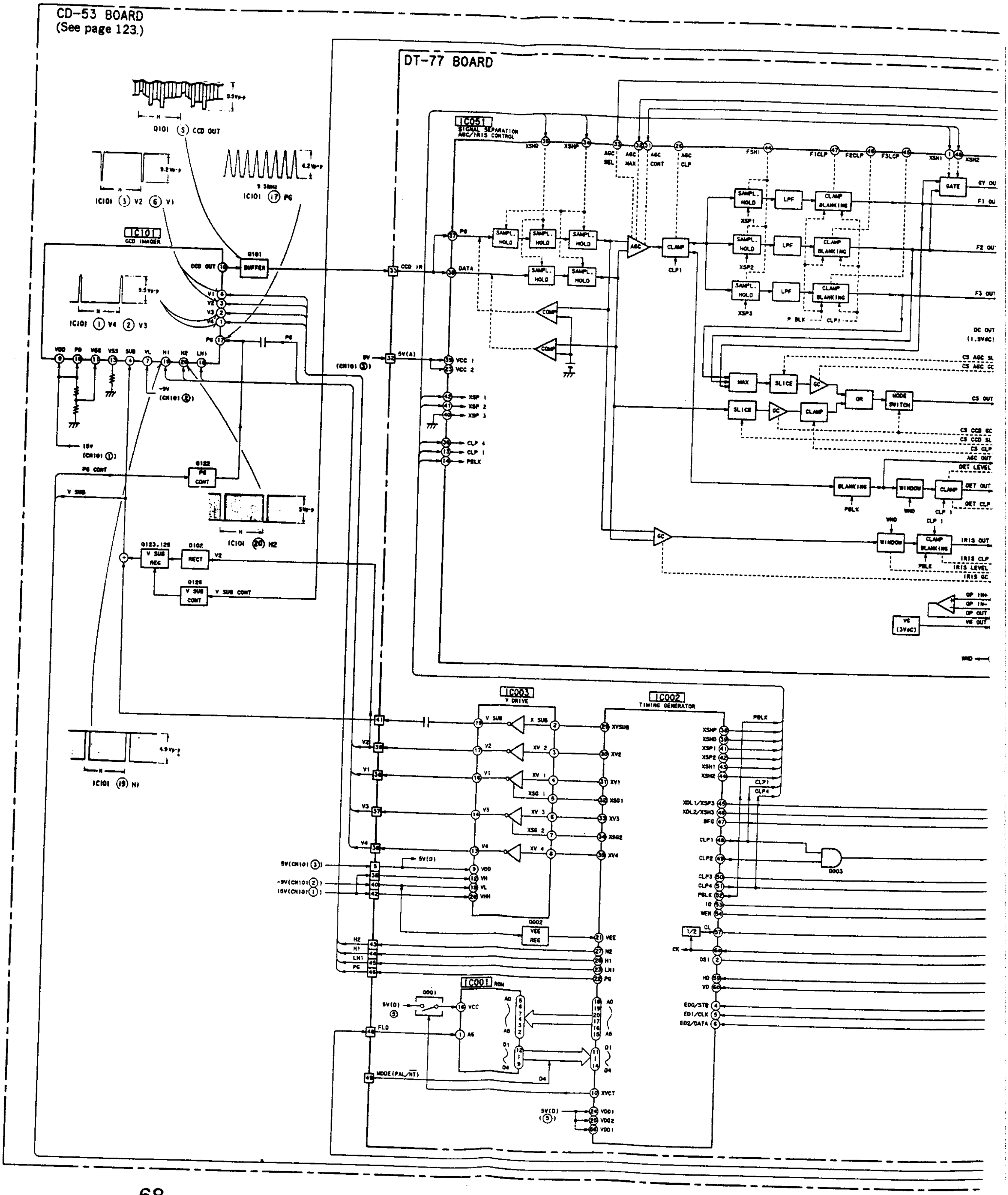
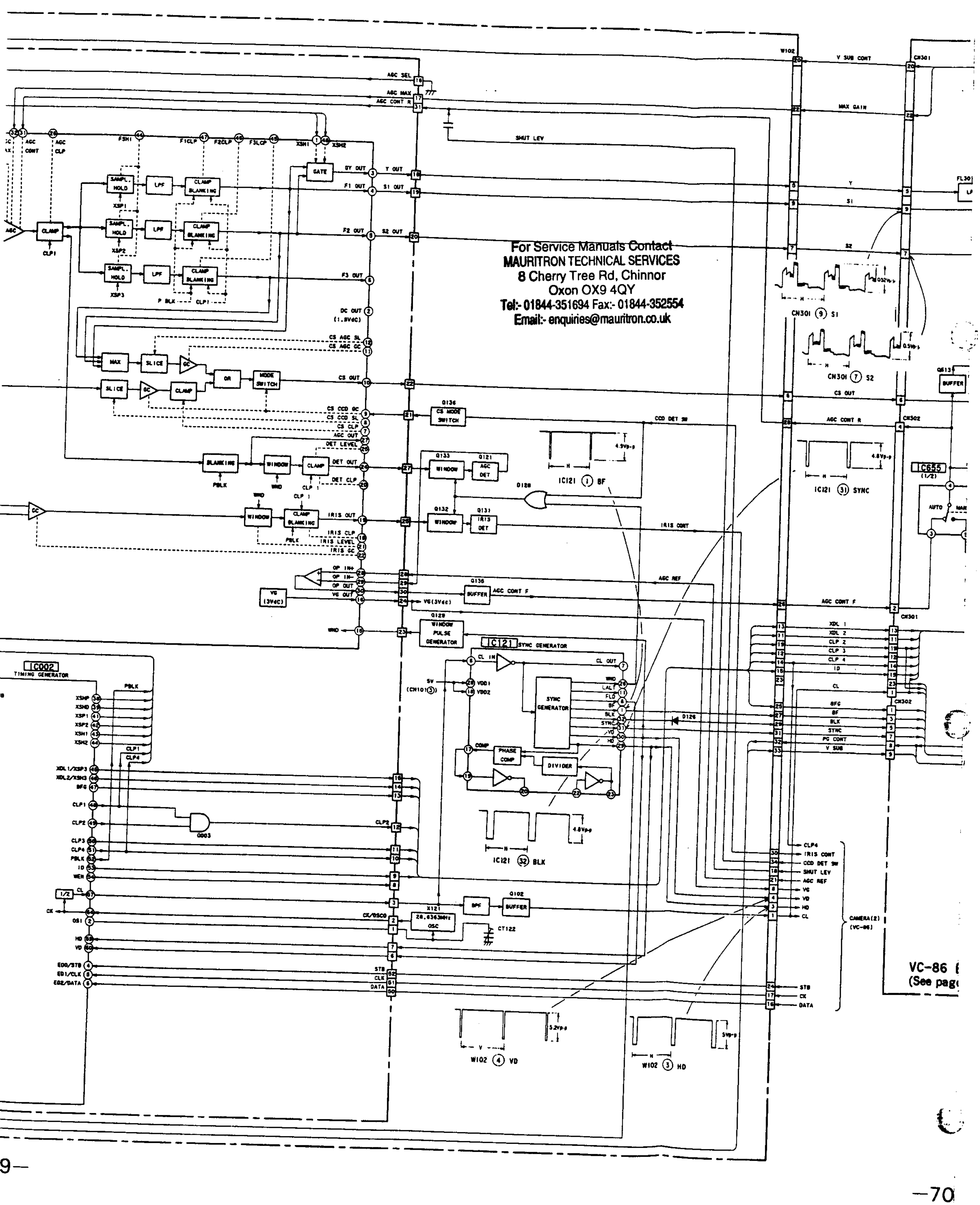

CD-53 BOARD
(See page 123.)
DT-77 BOARD
Q101 ⑤ CCD OUT
0.5Vp-p
IC101 ③ V2 ⑥ V1
9.2Vp-p
4.2Vp-p
9.5MHz
IC101 ⑰ PG
IC101
CCD IMAGER
CCD OUT
Q101
BUFFER
V1
V2
V3
V4
PG
9.5Vp-p
IC101 ① V4 ② V3
VDD
PD
VGG
VSS
SUB
VL
H1
H2
LH1
-9V
(CN101 ②)
15V
(CN101 ①)
PG CONT
V SUB
Q122
PG CONT
5Vp-p
IC101 ⑳ H2
Q123, 125
V SUB REC
Q102
RECT
V2
Q126
V SUB CONT
V SUB CONT
4.9Vp-p
IC101 ⑲ H1
IC051
SIGNAL SEPARATION
AGC/IRIS CONTROL
XSHD
XSHP
AGC SEL
AGC MAX
PG
SAMPL. HOLD
AGC
CCD IN
DATA
COMP
5V
(CN101 ③)
5V(A)
VCC 1
VCC 2
XSP 1
XSP 2
XSP 3
CLP 4
CLP 1
PBLK
IC003
V DRIVE
V SUB
X SUB
XVSUB
V2
XV 2
V1
XV 1
XSG 1
XVSG1
V3
XV 3
XSG 2
XVSG2
V4
XV 4
XV4
5V(CN101 ③)
-9V(CN101 ②)
15V(CN101 ①)
5V(D)
VDD
VH
VL
VHH
Q002
VEE REG
VEE
H2
H1
LH1
PG
IC001 ROM
Q001
5V(D) ⑤
VCC
A0
A6
D1
D4
FLD
MODE (PAL/NT)
XVCT
5V(D) (⑤)
VDD1
VDD2

AGRAM


CD-53 BOARD
(See page 123.)
DT-77 BOARD
IC101
CCD IMAGER
Q101 (5) CCD OUT
0.5Vp-p
IC101 (3) V2 (6) V1
9.2Vp-p
9.5MHz
IC101 (17) PG
4.2Vp-p
IC101 (1) V4 (2) V3
9.5Vp-p
IC101 (20) H2
5Vp-p
IC101 (19) H1
4.9Vp-p
CCD OUT
BUFFER
Q101
V1
V2
V3
V4
PG
VDD
PD
VGG
VSS
SUB
VL
H1
H2
LH1
-9V
(CN101 (2))
15V
(CN101 (1))
PG CONT
Q122
PG CONT
V SUB
Q123,125
V SUB REG
Q102
RECT
Q124
V SUB CONT
5V
(CN101 (3))
CCD IN
5V(A)
IC051
SIGNAL SEPARATION
AGC/IRIS CONTROL
XSHD
XSHP
AGC SEL
AGC MAX
AGC CONT
AGC CLP
FSH1
F1CLP
F2CLP
F3LCP
XSH1
XSH2
PG
DATA
SAMPL. HOLD
AGC
CLAMP
CLP1
COMP
VCC 1
VCC 2
XSP 1
XSP 2
XSP 3
CLP 4
CLP 1
PBLK
LPF
CLAMP BLANKING
GATE
GY OUT
F1 OUT
F2 OUT
F3 OUT
P BLK
DC OUT
(1.9VdC)
MAX
SLICE
GC
OR
MODE SWITCH
CS OUT
CS AGC SL
CS AGC GC
CS CCD GC
CS CCD SL
CS CLP
AGC OUT
DET LEVEL
BLANKING
WINDOW
DET OUT
DET CLP
WND
IRIS OUT
IRIS CLP
IRIS LEVEL
IRIS GC
OP IN+
OP IN-
OP OUT
VG
(3VdC)
VG OUT
WND
IC003
V DRIVE
V SUB
X SUB
XV 2
XV 1
XSG 1
XV 3
XSG 2
XV 4
VDD
VH
VL
VHH
5V(D)
5V(CN101 (3))
-9V(CN101 (2))
15V(CN101 (1))
Q002
VEE REG
H2
H1
LH1
PG
IC002
TIMING GENERATOR
XVSUB
XV2
XV1
XSG1
XV3
XSG2
XV4
VEE
PBLK
XSHP
XSHD
XSP1
XSP2
XSH1
XSH2
CLP1
CLP4
XDL1/XSP3
XDL2/XSH3
BFG
CLP1
CLP2
CLP3
CLP4
PBLK
ID
WEN
1/2
CL
CK
OS1
HD
VD
ED0/STB
ED1/CLK
ED2/DATA
Q003
IC001
ROM
Q001
5V(D)
(3)
VCC
A0
A6
D1
D4
FLD
MODE(PAL/NT)
XVCT
5V(D)
((5))
VDD1
VDD2
VDD1


AGC SEL
AGC MAX
AGC CONT R
AGC CONT
AGC CLP
FSH1
F1CLP
F2CLP
F3LCP
XSH1
XSH2
GATE
SY OUT
Y OUT
F1 OUT
S1 OUT
F2 OUT
S2 OUT
F3 OUT
SAMPL. HOLD
LPF
CLAMP BLANKING
CLAMP
CLP1
XSP1
XSP2
XSP3
P BLK
DC OUT (1.8Vdc)
CS AGC SL
CS AGC GC
MAX
SLICE
GC
OR
MODE SWITCH
CS OUT
CS CCD GC
CS CCD SL
CS CLP
AGC OUT
DET LEVEL
DET OUT
DET CLP
BLANKING
WINDOW
PBLK
WND
IRIS OUT
IRIS CLP
IRIS LEVEL
IRIS GC
OP IN+
OP IN−
OP OUT
VG OUT
VG (3Vdc)
Q136 CS MODE SWITCH
Q133 WINDOW
Q121 AGC DET
D128
Q132 WINDOW
Q131 IRIS DET
Q136 BUFFER
AGC CONT F
Q129 WINDOW PULSE GENERATOR
VG (3Vdc)
SHUT LEV
CCD DET SW
IRIS CONT
AGC REF
IC121 ① BF
4.5Vp-p
H
IC121 SYNC GENERATOR
CL IN
CL OUT
SV (CN101③)
VDD1
VDD2
WND
LALT
FLD
BF
BLK
SYNC
VD
HD
SYNC GENERATOR
COMP
PHASE COMP
DIVIDER
D126
IC121 ㉜ BLK
4.8Vp-p
IC002 TIMING GENERATOR
XSHP
XSHD
XSP1
XSP2
XSH1
XSH2
XDL1/XSP3
XDL2/XSH3
BFG
CLP1
CLP2
CLP3
CLP4
PBLK
ID
WEN
CL
1/2
CK
OS1
HD
VD
ED0/STB
ED1/CLK
ED2/DATA
Q003
CK/OSCO
X121 28.6363MHz OSC
CT122
BPF
Q102 BUFFER
STB
CLK
DATA
W102
V SUB CONT
MAX GAIN
Y
S1
S2
CN301 ⑨ S1
0.32Vp-p
CN301 ⑦ S2
0.5Vp-p
CS OUT
AGC CONT R
CN301
CN302
4.8Vp-p
IC121 ㉛ SYNC
XDL 1
XDL 2
CLP 2
CLP 3
CLP 4
ID
CL
BFG
BF
BLK
SYNC
PG CONT
V SUB
CLP4
IRIS CONT
CCD DET SW
SHUT LEV
AGC REF
VG
VD
HD
CL
STB
CK
DATA
CAMERA(2) (VC-86)
5.2Vp-p
V
W102 ④ VD
5Vp-p
W102 ③ HD
FL301
LP
Q613
BUFFER
IC655 (1/2)
AUTO
MAN
VC-86
(See pag

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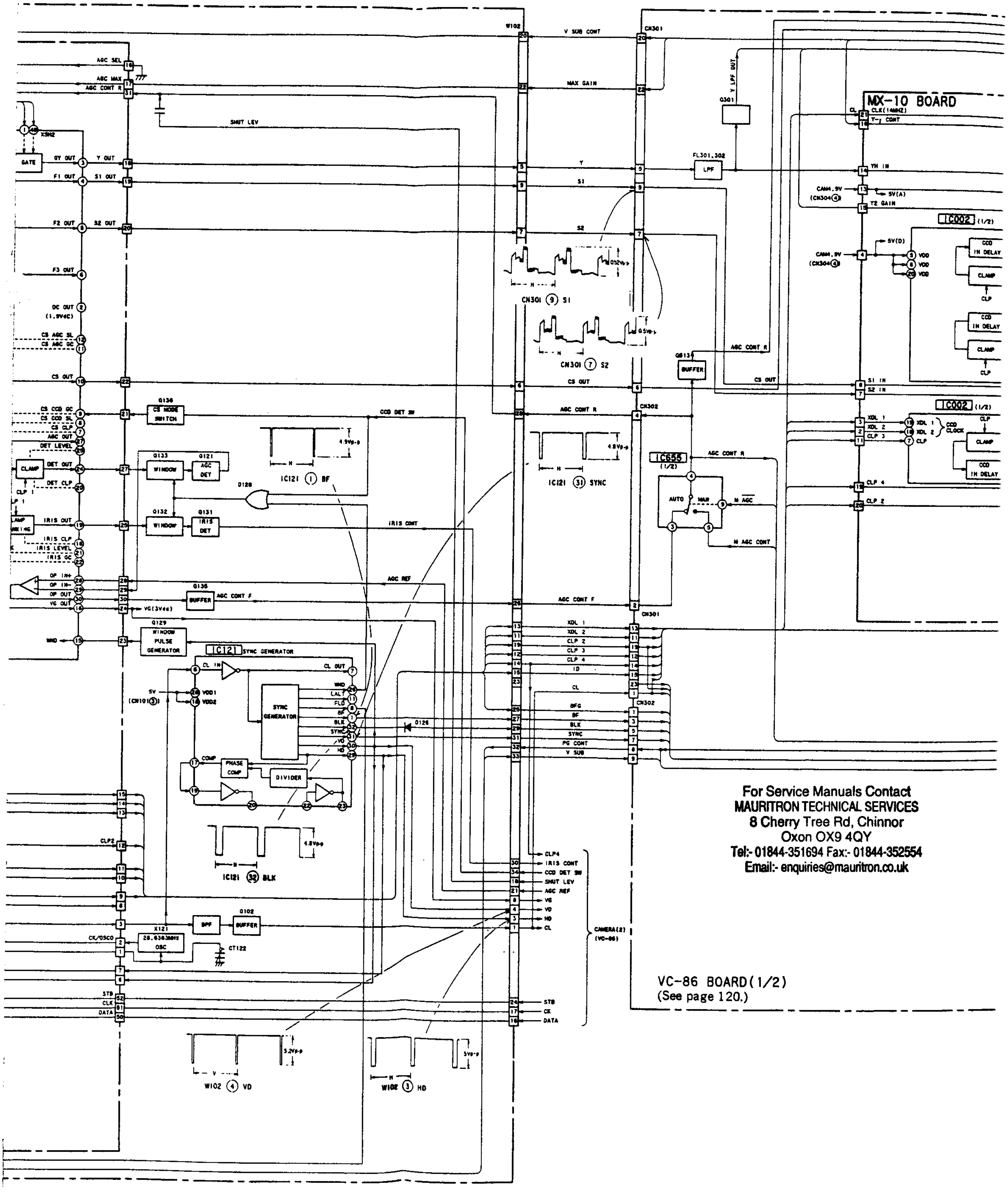
W102
CN301
V SUB CONT
AGC SEL
AGC MAX
AGC CONT R
MAX GAIN
SHUT LEV
XSH2
GATE
GY OUT
Y OUT
F1 OUT
S1 OUT
F2 OUT
S2 OUT
F3 OUT
DC OUT
(1.9VdC)
CS AGC SL
CS AGC GC
CS OUT
CS CCD GC
CS CCD SL
CS CLP
AGC OUT
DET LEVEL
CLAMP
DET OUT
DET CLP
IRIS OUT
IRIS CLP
IRIS LEVEL
IRIS GC
OP IN+
OP IN-
OP OUT
VG OUT
VG(3Vdc)
WND
Q136
CS MODE SWITCH
CCD DET SW
Q133
WINDOW
Q121
AGC DET
Q128
Q132
Q131
IRIS DET
IRIS CONT
AGC REF
Q135
BUFFER
AGC CONT F
Q129
WINDOW PULSE GENERATOR
IC121 SYNC GENERATOR
CL IN
CL OUT
5V
(CN101③)
VDD1
VDD2
SYNC GENERATOR
LALT
FLD
BF
BLK
SYNC
VD
HD
COMP
PHASE COMP
DIVIDER
D126
IC121 ① BF
IC121 ㉛ SYNC
IC121 ㉜ BLK
4.9Vp-p
4.8Vp-p
H
Y
S1
S2
CN301 ⑨ S1
CN301 ⑦ S2
0.52Vp-p
0.5Vp-p
Q301
Y LPF OUT
FL301,302
LPF
Q613
BUFFER
AGC CONT R
CS OUT
CN302
IC655 (1/2)
AUTO
MAN
M AGC
M AGC CONT
MX-10 BOARD
CLK(14MHZ)
Y-1 CONT
YH IN
CAM4.9V
(CN304④)
5V(A)
Y2 GAIN
IC002 (1/2)
5V(D)
VDD
CCD IN DELAY
CLAMP
CLP
S1 IN
S2 IN
XDL 1
XDL 2
CLP 3
CCD CLOCK
CLP 4
CLP 2
XDL 1
XDL 2
CLP 2
CLP 3
CLP 4
ID
CL
BFG
BF
BLK
SYNC
PG CONT
V SUB
CLP2
CLP4
IRIS CONT
CCD DET SW
SHUT LEV
AGC REF
VG
VD
HD
CL
CAMERA(2)
(VC-86)
CK/OSCO
X121
28.6363MHz
OSC
CT122
BPF
Q102
BUFFER
STB
CLK
DATA
STB
CK
DATA
3.2Vp-p
5Vp-p
V
W102 ④ VD
W102 ③ HD
VC-86 BOARD(1/2)
(See page 120.)

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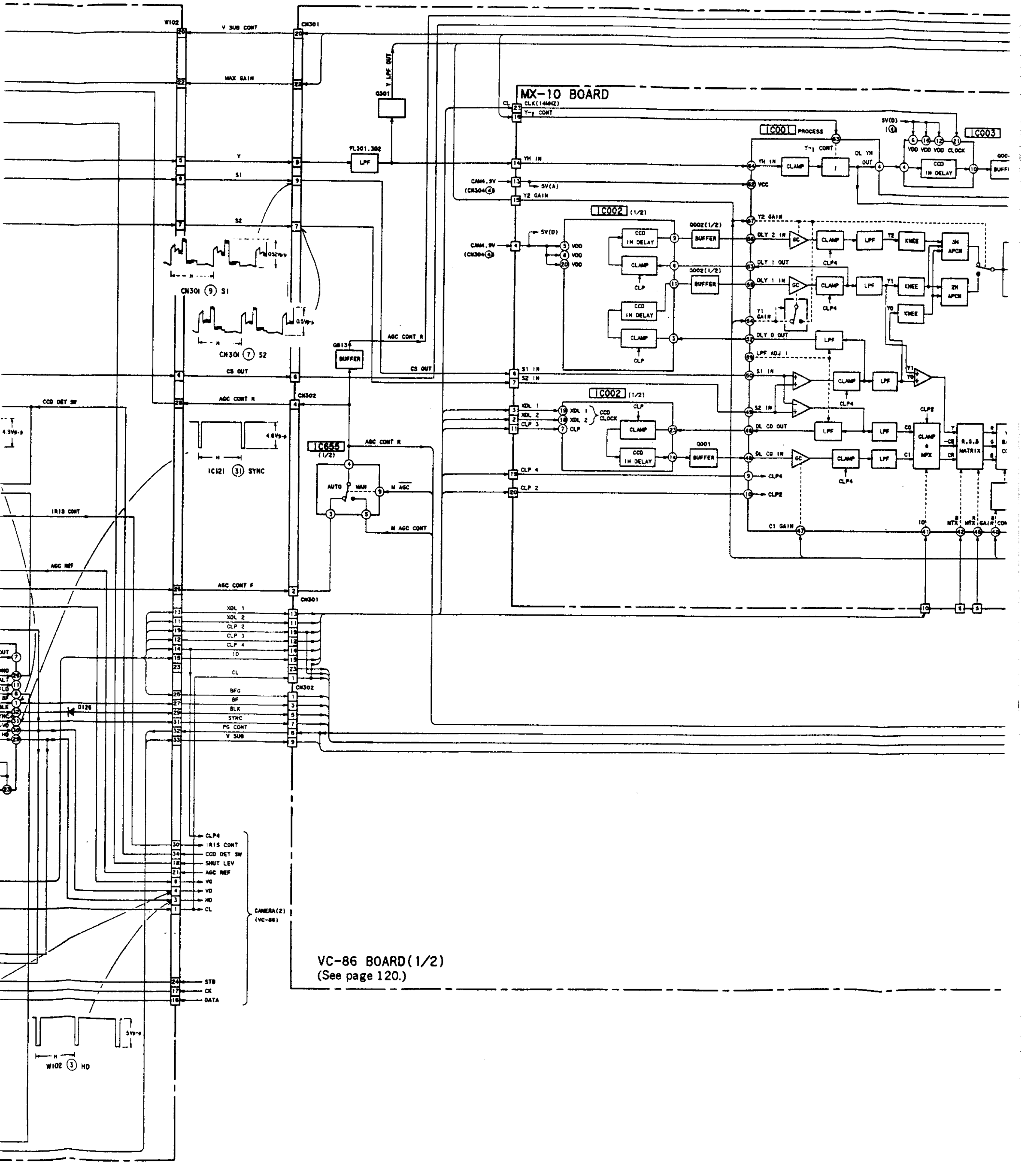
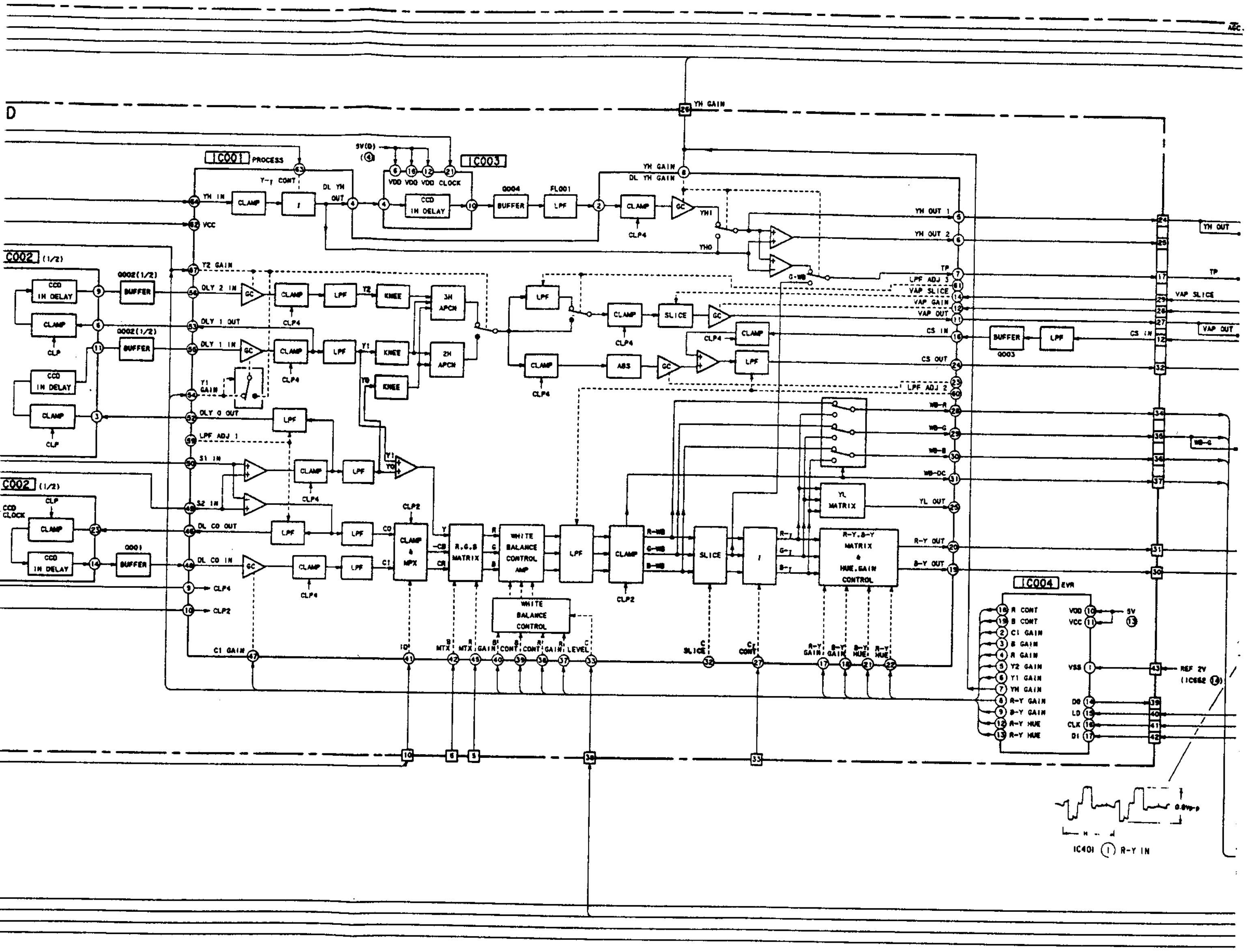

MX-10 BOARD
VC-86 BOARD(1/2)
(See page 120.)
W102
CN301
CN302
V SUB CONT
MAX GAIN
Y
S1
S2
CS OUT
AGC CONT R
AGC CONT F
CCD DET SW
IRIS CONT
AGC REF
CN301 ⑨ S1
CN301 ⑦ S2
0.32Vp-p
0.5Vp-p
4.6Vp-p
IC121 ㉛ SYNC
W102 ③ HD
5Vp-p
Q301
Y LPF OUT
FL301,302
LPF
Q613
BUFFER
IC655 (1/2)
AUTO
MAN
M AGC
M AGC CONT
XDL 1
XDL 2
CLP 2
CLP 3
CLP 4
ID
CL
BFG
BF
BLK
SYNC
PG CONT
V SUB
D126
CLP4
IRIS CONT
CCD DET SW
SHUT LEV
AGC REF
VG
VD
HD
CL
STB
CK
DATA
CAMERA(2) (VC-86)
CLK(14MHZ)
Y-γ CONT
YH IN
CAM4.9V
(CN304④)
5V(A)
Y2 GAIN
5V(D)
IC001
PROCESS
IC002 (1/2)
IC003
CLAMP
γ
DL YH OUT
VCC
VDD
CLOCK
CCD 1H DELAY
Q002(1/2)
Q001
DLY 2 IN
DLY 1 OUT
DLY 1 IN
DLY 0 OUT
LPF ADJ 1
Y1 GAIN
GC
LPF
KNEE
3H APCH
2H APCH
Y2
Y1
Y0
S1 IN
S2 IN
CCD CLOCK
CLP
DL C0 OUT
DL C0 IN
CLP 4
CLP 2
C1 GAIN
CLAMP & MPX
R.G.B MATRIX
C0
C1
CR
CB
MTX
GAIN
ID


D
IC001 PROCESS
IC002 (1/2)
IC003
IC004 EVR
YH GAIN
5V(D)
VDD VDD VDD CLOCK
CCD IN DELAY
Q004 BUFFER
FL001 LPF
YH IN
VCC
Y-γ CONT
DL YH OUT
CLAMP
γ
GC
YHI
YHO
YH OUT 1
YH OUT 2
TP
G-WB
Y2 GAIN
DLY 2 IN
DLY 1 OUT
DLY 1 IN
Y1 GAIN
DLY 0 OUT
LPF ADJ 1
S1 IN
S2 IN
DL CO OUT
DL CO IN
CLP4
CLP2
CLP
CCD CLOCK
Q002(1/2) BUFFER
Q001 BUFFER
LPF
KNEE
3H APCN
2H APCN
Y1
Y2
Y0
SLICE
ABS
LPF ADJ 3
VAP SLICE
VAP GAIN
VAP OUT
CS IN
CS OUT
LPF ADJ 2
Q003
WB-R
WB-G
WB-B
WB-DC
YL MATRIX
YL OUT
CLAMP & MPX
R.G.B MATRIX
WHITE BALANCE CONTROL AMP
WHITE BALANCE CONTROL
R-WB
G-WB
B-WB
R-γ
G-γ
B-γ
R-Y, B-Y MATRIX & HUE, GAIN CONTROL
R-Y OUT
B-Y OUT
C1 GAIN
ID
MTX
GAIN
CONT
LEVEL
SLICE
R-Y GAIN
B-Y GAIN
B-Y HUE
R-Y HUE
R CONT
B CONT
C1 GAIN
B GAIN
R GAIN
Y2 GAIN
Y1 GAIN
YH GAIN
R-Y GAIN
B-Y GAIN
R-Y HUE
B-Y HUE
VDD
VCC
VSS
DO
LD
CLK
DI
5V
REF 2V
(IC662 ⑭)
YH OUT
VAP SLICE
VAP OUT
CS IN
WB-G
0.8Vp-p
H
IC401 ① R-Y IN
AGC

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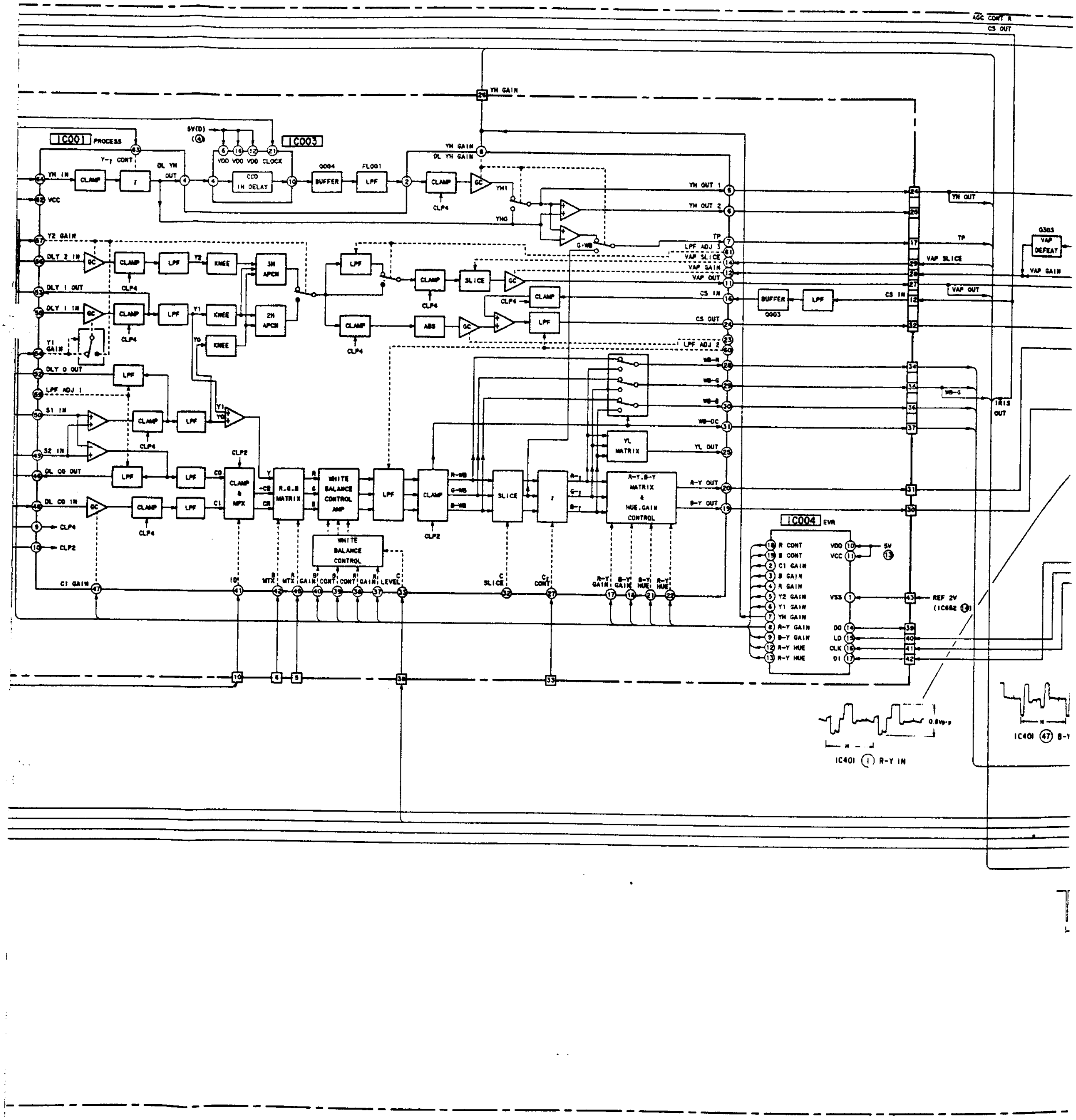
IC001 PROCESS
IC003
IC004 EVR
AGC CONT R
CS OUT
YH GAIN
5V(D)
VDD VDD VDD CLOCK
CCD 1H DELAY
Y-γ CONT
DL YH OUT
YH IN
CLAMP
γ
BUFFER
Q004
FL001
LPF
GC
CLP4
YH GAIN
DL YH GAIN
YH1
YH0
G-WB
YH OUT 1
YH OUT 2
TP
LPF ADJ 3
VAP SLICE
VAP GAIN
VAP OUT
CS IN
CS OUT
LPF ADJ 2
VCC
Y2 GAIN
DLY 2 IN
DLY 1 OUT
DLY 1 IN
Y1 GAIN
DLY 0 OUT
LPF ADJ 1
S1 IN
S2 IN
DL C0 OUT
DL C0 IN
CLP4
CLP2
C1 GAIN
Y2
Y1
Y0
KNEE
3H APCN
2H APCN
SLICE
ABS
BUFFER
Q003
YH OUT
VAP DEFEAT
Q303
VAP SLICE
VAP GAIN
VAP OUT
IRIS OUT
WB-G
WB-R
WB-G
WB-B
WB-DC
YL OUT
YL MATRIX
R-Y OUT
B-Y OUT
C0
C1
CLAMP & MPX
R.G.B MATRIX
WHITE BALANCE CONTROL AMP
WHITE BALANCE CONTROL
R-WB
G-WB
B-WB
R-Y, B-Y MATRIX & HUE, GAIN CONTROL
ID
B MTX
R MTX
B GAIN
B CONT
R CONT
R GAIN
R LEVEL
C LEVEL
C SLICE
C CONT
R-Y GAIN
B-Y GAIN
B-Y HUE
R-Y HUE
R CONT
B CONT
C1 GAIN
B GAIN
R GAIN
Y2 GAIN
Y1 GAIN
YH GAIN
R-Y GAIN
B-Y GAIN
R-Y HUE
R-Y HUE
VDD
VCC
VSS
DO
LD
CLK
DI
5V
REF 2V
(IC682 ⑭)
0.8Vp-p
H
IC401 ① R-Y IN
IC401 ㊼ B-Y

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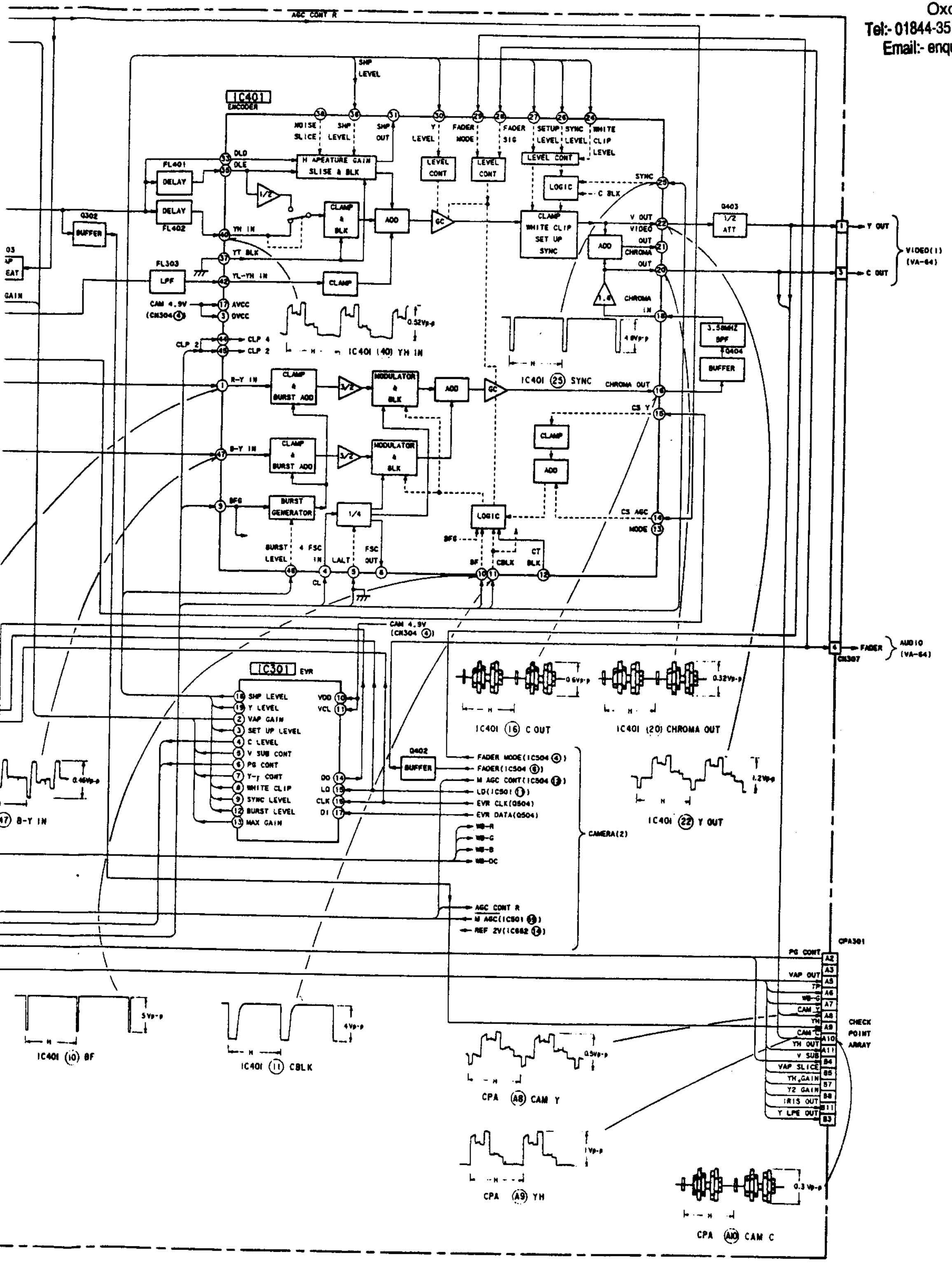
AGC CONT R
IC401 ENCODER
NOISE SLICE
SHP LEVEL
SHP OUT
Y LEVEL
FADER MODE
FADER SIG
SETUP LEVEL
SYNC LEVEL
WHITE CLIP LEVEL
H APEATURE GAIN SLISE & BLK
DELAY
FL401
FL402
Q302 BUFFER
1/2
CLAMP & BLK
ADD
GC
LEVEL CONT
LOGIC
C BLK
CLAMP WHITE CLIP SET UP SYNC
SYNC
V OUT
VIDEO OUT
CHROMA OUT
CHROMA IN
Q403 1/2 ATT
Y OUT
C OUT
VIDEO(1) (VA-64)
FL303 LPF
YL-YH IN
YH IN
YT BLK
CAM 4.9V (CN304 ④)
AVCC
DVCC
CLP 4
CLP 2
0.52Vp-p
IC401 (40) YH IN
IC401 (25) SYNC
4.8Vp-p
3.58MHZ BPF
Q404 BUFFER
R-Y IN
B-Y IN
CLAMP & BURST ADD
3/2
MODULATOR & BLK
BFG
BURST GENERATOR
1/4
CHROMA OUT
CS Y
CLAMP
ADD
CS AGC
MODE
BURST LEVEL
4 FSC IN
LALT
FSC OUT
CL
BF
CBLK
CT BLK
CAM 4.9V (CN304 ④)
FADER
AUDIO (VA-64)
CN307
IC301 EVR
SHP LEVEL
Y LEVEL
VAP GAIN
SET UP LEVEL
C LEVEL
V SUB CONT
PG CONT
Y-γ CONT
WHITE CLIP
SYNC LEVEL
BURST LEVEL
MAX GAIN
VDD
VCL
DO
LD
CLK
DI
Q402 BUFFER
FADER MODE(IC504 ④)
FADER(IC504 ⑥)
M AGC CONT(IC504 ⑫)
LD(IC501 ①)
EVR CLK(Q504)
EVR DATA(Q504)
WB-R
WB-G
WB-B
WB-OC
CAMERA(2)
AGC CONT R
M AGC(IC501 ⑬)
REF 2V(IC682 ⑭)
0.6Vp-p
IC401 (16) C OUT
0.32Vp-p
IC401 (20) CHROMA OUT
1.2Vp-p
IC401 (22) Y OUT
0.46Vp-p
(47) B-Y IN
5Vp-p
IC401 (10) BF
4Vp-p
IC401 (11) CBLK
0.5Vp-p
CPA (A8) CAM Y
1Vp-p
CPA (A9) YH
0.3Vp-p
CPA (A10) CAM C
CPA301
PG CONT
VAP OUT
TP
WB-G
CAM Y
YH
CAM C
YH OUT
V SUB
VAP SLICE
YH GAIN
Y2 GAIN
IRIS OUT
Y LPF OUT
CHECK POINT ARRAY

3-4. CAMERA SYSTEM CONTROL VC-86 BOARD IC501 (MC68HC11E9)

〔Description〕

MC68HC11E9 is a 8-bit one-chip micro controller with a built-in nonvolatile memory (EEPROM). The camera system can be controlled by only this micro controller. In addition, protocol master control of the LANC communication can be performed.

1. Function
1) EVR Control
2) AWB Control
3) AE Control
4) LANC communication protocol control

2. Pin Description

PIN No.	PIN Name	I/O	Function
1	AE	I	—
2	NC	—	—
3	NC	—	—
4	NC	—	—
5	DISCHG	O	AWB. AE Integration-type A/D reset pulse
6	B SELECT	O	AWB Instrumentation line select pulse (blue)
7	G SELECT	O	AWB Instrumentation line select pulse (green)
8	R SELECT	O	AWB Instrumentation line select pulse (red)
9	TG STB	O	TG strobe.
10	DA LD1	O	D/A (IC504) load pulse.
11	DA LD0	O	D/A (MX-10 Board, IC301) load pulse.
12	DA SSW	O	D/A communication line switching.
13	F SENS1	I	—
14	HALL SENS	I	Hall element voltage input (Analog input)
15	ZOOM SENS	I	—
16	AN5	I	—
17	ZOOM KEY	I	Zoom switch voltage input (Analog input)
18	AGC CONT	I	AGC voltage input (Analog input)
19	F SENS2	I	—
20	AE IN	I	Integral type A/D converter comparactor input for AE.
21	A/D REF(−)	—	Built-in A/D converter the minimum standard voltage (Analog input)
22	A/D REF(+)	—	Built-in A/D converter the minimum standard voltage (Analog input)
23	V_{ss}	—	GND
24	V_{ss}	—	GND
25	MODE B	I	Pull up to SS4.9V
26	NC	—	—
27	MODA	I	Pull down to GND
28	STR A	—	—
29	E	—	—
30	STR B	—	—
31	EXTAL	O	Built-in inverter output for oscillating element
32	NC	—	—
33	XTAL	I	Built-in inverter input for oscillating element
34	CAM POWER	I	Camera power source rise supervision
35	NC	—	—
36	JCS	O	—
37	PC2	—	—
38	AF MODE	O	ON/OFF specification of AF mode.
39	FOCUS N	O	Focus motor N-direction rotating designation
40	FOCUS F	O	Focus motor ∞-direction rotating designation
41	ZOOM T	O	Zoom motor T-direction rotating designation
42	ZOOM W	O	Zoom motor W-direction rotating designation
43	$\overline{\text{RESET}}$	I	Reset
44	NC	—	—
45	$\overline{\text{XIRQ}}$	I	Pull up to SS4.9V
46	$\overline{\text{IRQ}}$	I	Pull up to SS4.9V
47	LANC IN	I	LANC input
48	NC	—	—
49	V_{ss}	—	GND
50	LANC OUT	O	LANC output
51	CAM SI	I	Serial data input
52	CAM SO	O	Serial data output
53	SCK	O	Serial clock
54	SENS DRIVE	O	—
55	V_{DD}	—	SS4.9V
56	FADER B/$\overline{\text{W}}$	O	Specification of FADER mode.
57	PA6	O	CCD DET switch select
58	OC3	—	—
59	$\overline{\text{MAN GAIN}}$	O	AGC system automatic/manual select
60	NC	—	—
61	NC	—	—
62	$\overline{\text{MAN IRIS}}$	O	IRIS system automatic/manual select
63	$\overline{\text{CAMCS}}$	I	Camera chip select input
64	$\overline{\text{AW IN}}$	I	AWB Integration-type A/D converter comparator input

3-5. C

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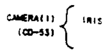
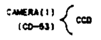
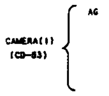
3-5. CAMERA (2) BLOCK DIAGRA



	I/O	Function
	I	Built-in inverter input for oscillating element
R	I	Camera power source rise supervision
	—	——
	O	——
	—	——
	O	ON/OFF specification of AF mode.
	O	Focus motor N-direction rotating designation
	O	Focus motor ∞-direction rotating designation
	O	Zoom motor T-direction rotating designation
	O	Zoom motor W-direction rotating designation
	I	Reset
	—	——
	I	Pull up to SS4.9V
	I	Pull up to SS4.9V
	I	LANC input
	—	——
	—	GND
	O	LANC output
	I	Serial data input
	O	Serial data output
	O	Serial clock
E	O	——
	—	SS4.9V
V	O	Specification of FADER mode.
	O	CCD DET switch select
	—	——
	O	AGC system automatic/manual select
	—	——
	—	——
	O	IRIS system automatic/manual select
	I	Camera chip select input
	I	AWB Integration-type A/D converter comparator input





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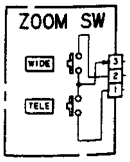
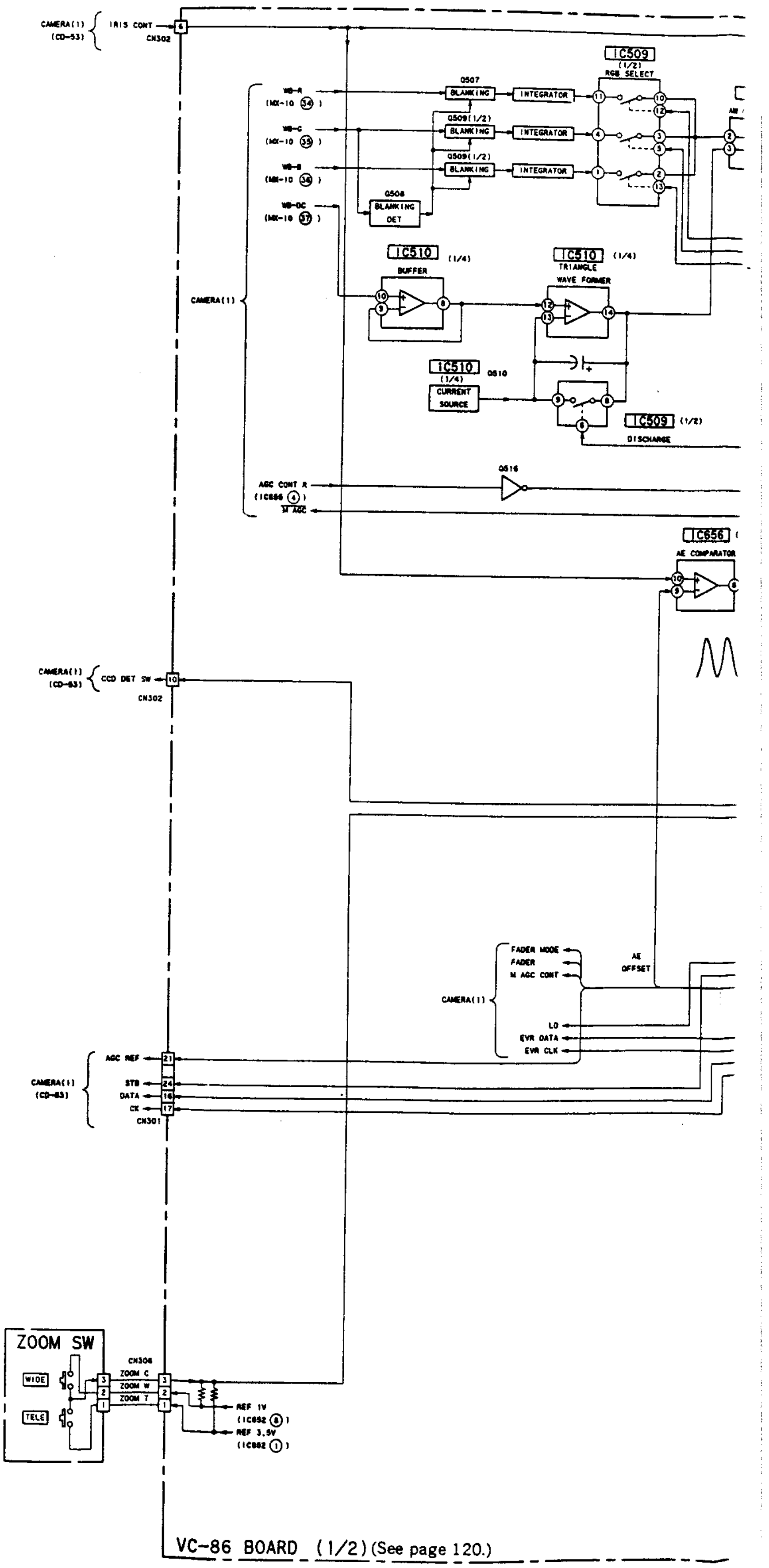
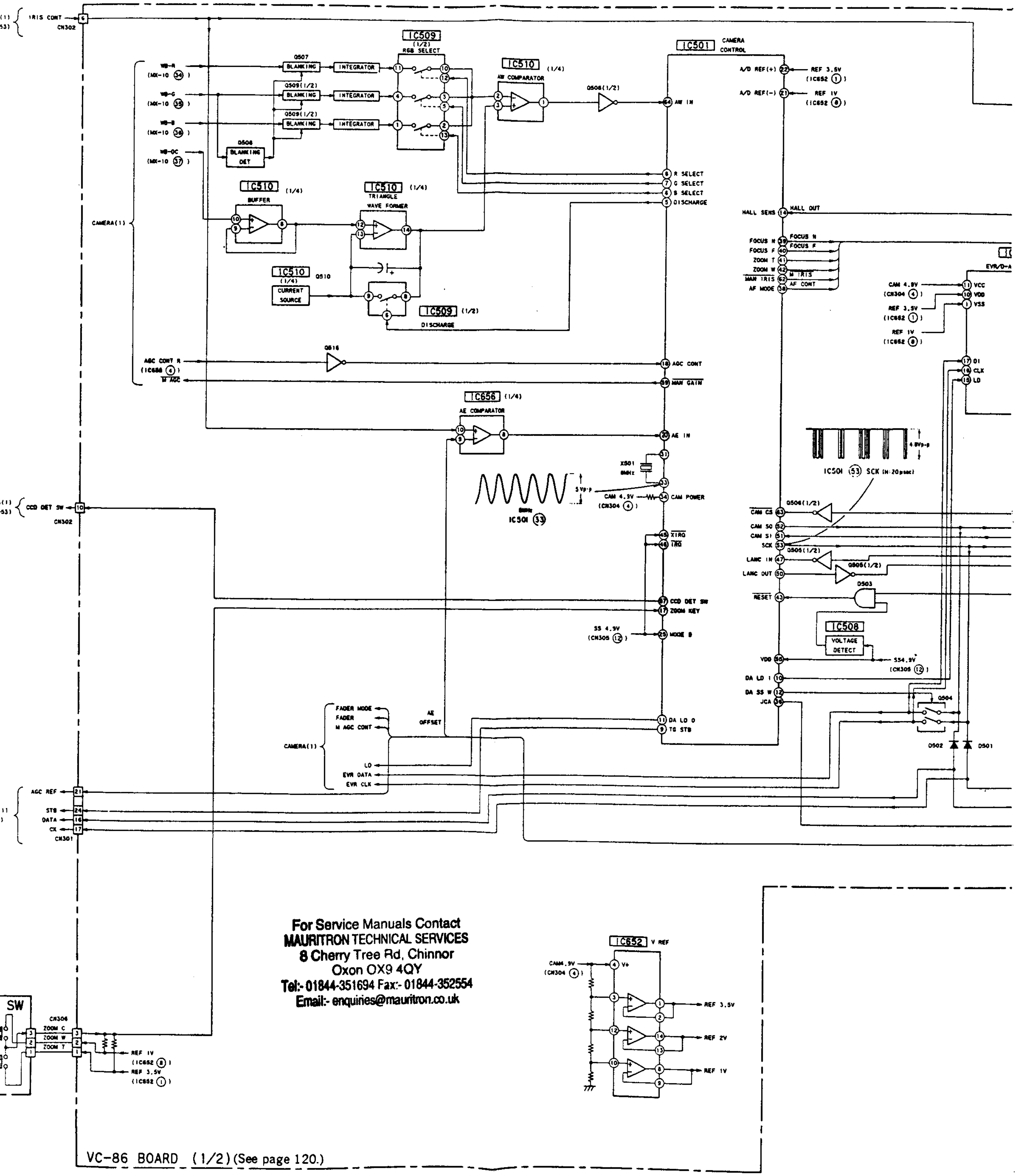


3-5. CAMERA (2) BLOCK DIAGRAM

or input


CAMERA(1)
(CD-53)
IRIS CONT
6
CN302
IC509
(1/2)
RGB SELECT
WB-R
(MX-10 ㉞)
WB-G
(MX-10 ㉟)
WB-B
(MX-10 ㊱)
WB-DC
(MX-10 ㊲)
Q507
BLANKING
Q509(1/2)
BLANKING
Q509(1/2)
BLANKING
INTEGRATOR
INTEGRATOR
INTEGRATOR
⑪ ⑩ ⑫
④ ③ ⑤
① ② ⑬
② ③
Q508
BLANKING
DET
CAMERA(1)
IC510 (1/4)
BUFFER
⑩ ⑨ ⑧
IC510 (1/4)
TRIANGLE
WAVE FORMER
⑫ ⑬ ⑭
IC510
(1/4)
Q510
CURRENT
SOURCE
⑨ ⑧ ⑥
IC509 (1/2)
DISCHARGE
Q516
AGC CONT R
(IC656 ④)
M AGC
IC656
AE COMPARATOR
⑩ ⑨ ⑥
CAMERA(1)
(CD-53)
CCD DET SW
10
CN302
FADER MODE
FADER
M AGC CONT
CAMERA(1)
LO
EVR DATA
EVR CLK
AE
OFFSET
CAMERA(1)
(CD-53)
AGC REF
STB
DATA
CK
21
24
16
17
CN301
ZOOM SW
WIDE
TELE
CN306
ZOOM C
ZOOM W
ZOOM T
3
2
1
REF 1V
(IC652 ⑧)
REF 3.5V
(IC682 ①)
VC-86 BOARD (1/2) (See page 120.)

AGRAM


IRIS CONT
CN302
IC509 (1/2) RGB SELECT
IC510 (1/4) AW COMPARATOR
IC501 CAMERA CONTROL
Q507 BLANKING
INTEGRATOR
Q509(1/2) BLANKING
Q508 BLANKING DET
WB-R (MX-10 34)
WB-G (MX-10 35)
WB-B (MX-10 36)
WB-DC (MX-10 37)
Q506(1/2)
AW IN
A/D REF(+) 22
A/D REF(−) 21
REF 3.5V (IC652 ①)
REF 1V (IC652 ⑧)
R SELECT
G SELECT
B SELECT
DISCHARGE
IC510 (1/4) BUFFER
IC510 (1/4) TRIANGLE WAVE FORMER
IC510 (1/4) CURRENT SOURCE
Q510
IC509 (1/2) DISCHARGE
CAMERA(1)
HALL SENS
HALL OUT
FOCUS N
FOCUS F
ZOOM T
ZOOM W
MAN IRIS
M IRIS
AF MODE
AF CONT
EVR/D-A
CAM 4.9V (CN304 ④)
VCC
VDD
VSS
DI
CLK
LD
Q516
AGC CONT R (IC686 ④)
M AGC
AGC CONT
MAN GAIN
IC656 (1/4) AE COMPARATOR
AE IN
X501 8MHz
5Vp-p
8MHz IC501 33
CAM POWER
4.8Vp-p
IC501 53 SCK (H:20μsec)
CCD DET SW
CN302
XIRQ
IRQ
CAM CS
CAM SO
CAM SI
SCK
Q505(1/2)
LANC IN
LANC OUT
Q503
RESET
CCD DET SW
ZOOM KEY
SS 4.9V (CN305 ⑫)
MODE B
IC508 VOLTAGE DETECT
VDD
SS4.9V (CN305 ⑫)
DA LD I
DA SS W
JCA
Q504
Q502
D501
FADER MODE
FADER
M AGC CONT
AE OFFSET
CAMERA(1)
DA LD O
TG STB
LD
EVR DATA
EVR CLK
AGC REF
STB
DATA
CK
CN301
SW
CN306
ZOOM C
ZOOM W
ZOOM T
REF 1V (IC652 ⑧)
REF 3.5V (IC652 ①)
IC652 V REF
CAM4.9V (CN304 ④)
V+
REF 3.5V
REF 2V
REF 1V

VC-86 BOARD (1/2)(See page 120.)

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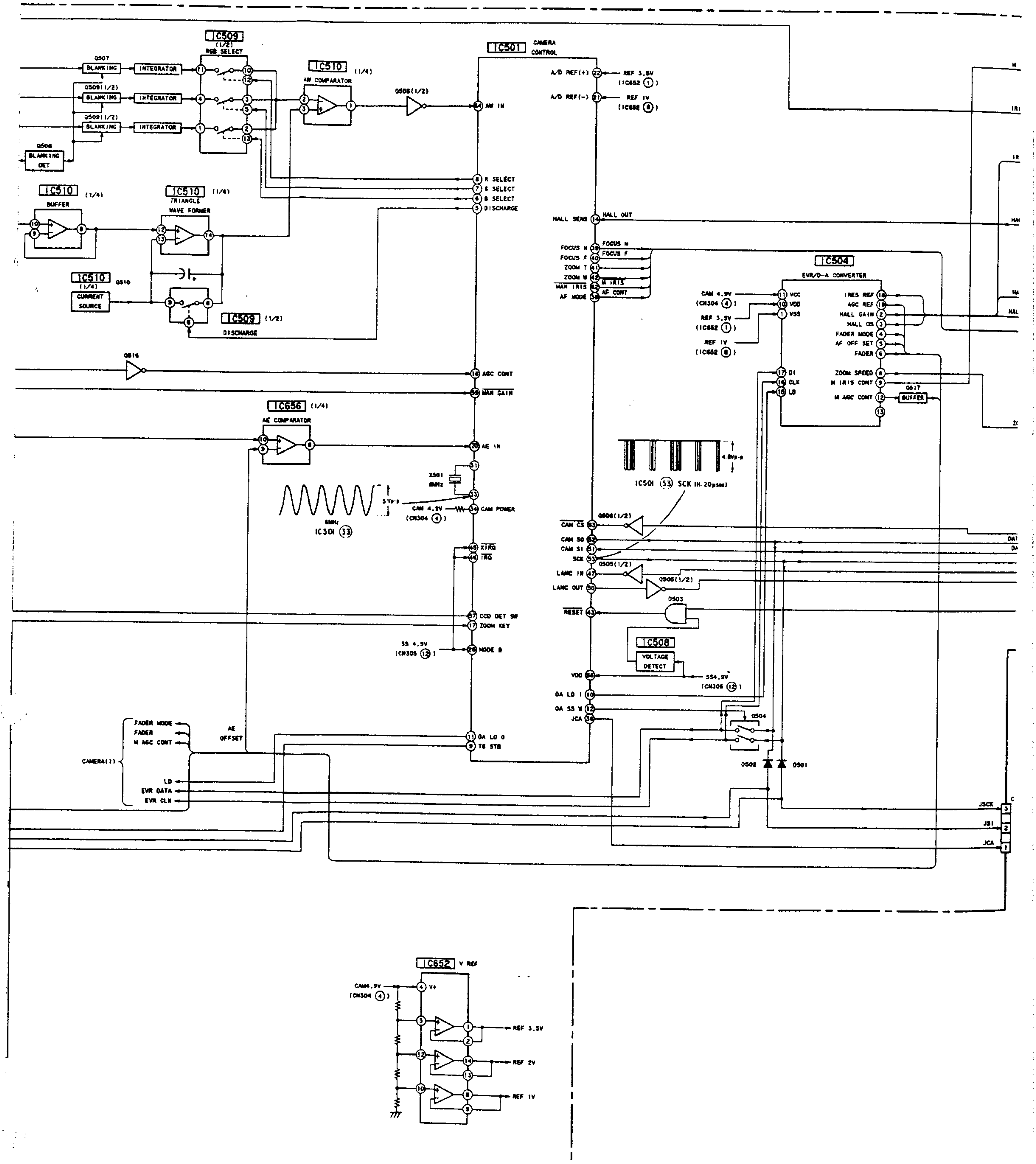
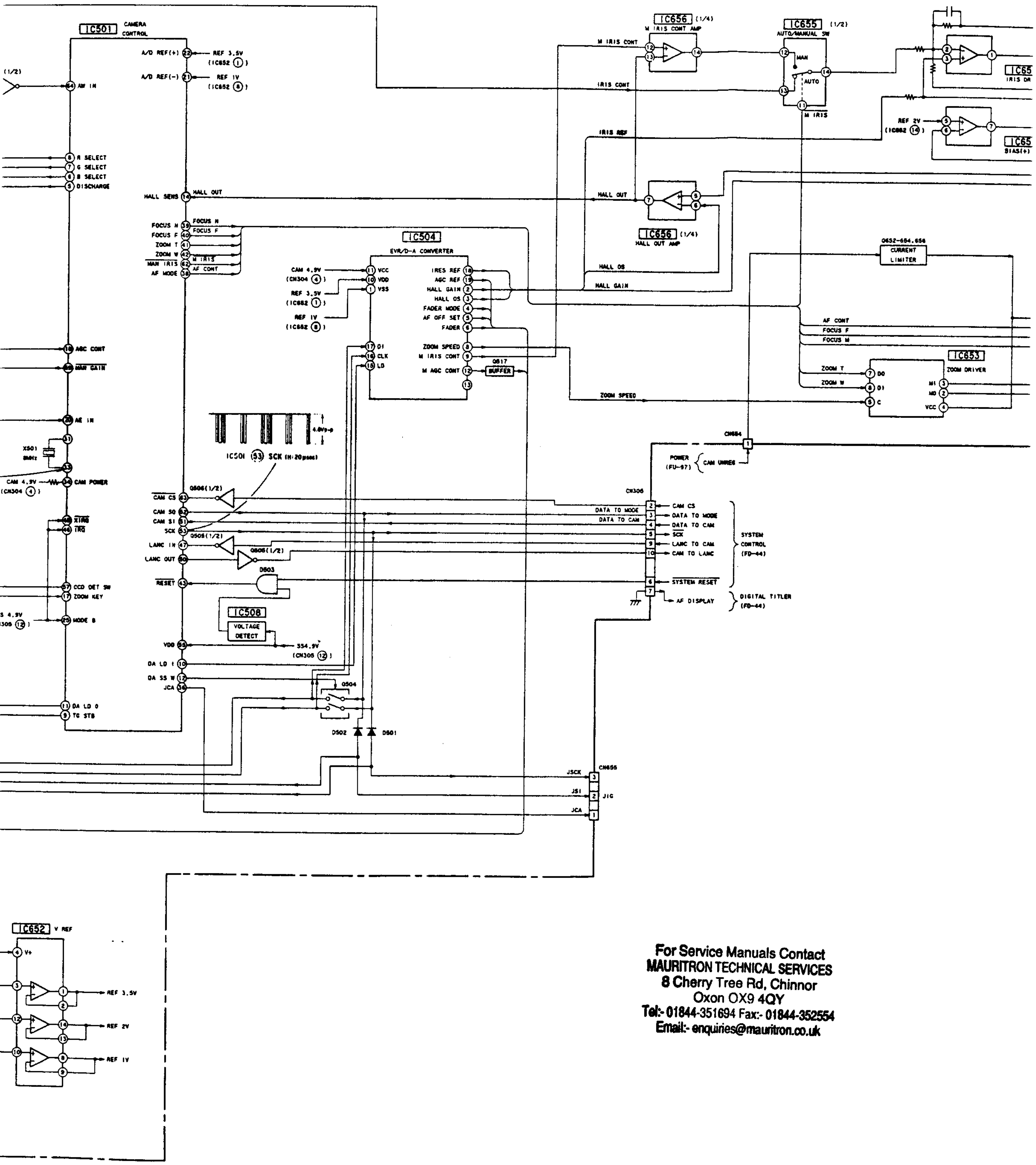

IC509 (1/2) RGB SELECT
Q507
BLANKING
INTEGRATOR
Q509(1/2)
Q508 BLANKING DET
IC510 (1/4) AW COMPARATOR
Q508(1/2)
IC501 CAMERA CONTROL
A/D REF(+) 22
REF 3.5V (IC652 ①)
A/D REF(−) 21
REF 1V (IC652 ⑧)
AW IN
R SELECT
G SELECT
B SELECT
DISCHARGE
IC510 (1/4) BUFFER
IC510 (1/4) TRIANGLE WAVE FORMER
IC510 (1/4) CURRENT SOURCE
Q510
IC509 (1/2) DISCHARGE
HALL SENS
HALL OUT
FOCUS N
FOCUS F
ZOOM T
ZOOM W
MAN IRIS
AF MODE
M IRIS
AF CONT
IC504 EVR/D-A CONVERTER
CAM 4.9V (CN304 ④)
REF 3.5V (IC652 ①)
REF 1V (IC652 ⑧)
VCC
VDD
VSS
IRES REF
AGC REF
HALL GAIN
HALL OS
FADER MODE
AF OFF SET
FADER
ZOOM SPEED
M IRIS CONT
M AGC CONT
Q517 BUFFER
DI
CLK
LD
Q516
AGC CONT
MAN GAIN
IC656 (1/4) AE COMPARATOR
AE IN
X501 8MHz
5Vp-p
8MHz IC501 ㉝
CAM 4.9V (CN304 ④)
CAM POWER
4.8Vp-p
IC501 ㉝ SCK (H:20μsec)
CAM CS
CAM SO
CAM SI
SCK
Q506(1/2)
Q505(1/2)
LANC IN
LANC OUT
Q503
RESET
IC508 VOLTAGE DETECT
XIRQ
IRQ
CCD DET SW
ZOOM KEY
SS 4.9V (CN305 ⑫)
MODE B
VDD
SS4.9V (CN305 ⑫)
DA LD 1
DA SS W
JCA
DA LD 0
TC STB
Q504
Q502
Q501
CAMERA(1)
FADER MODE
FADER
M AGC CONT
AE OFFSET
LD
EVR DATA
EVR CLK
JSCK
JSI
JCA
IC652 V REF
CAM4.9V (CN304 ④)
V+
REF 3.5V
REF 2V
REF 1V

/2) (See page 120.)


IC501 CAMERA CONTROL
A/D REF(+)
A/D REF(−)
REF 3.5V (IC652 ①)
REF 1V (IC652 ⑧)
AW IN
R SELECT
G SELECT
B SELECT
DISCHARGE
HALL SENS
HALL OUT
FOCUS N
FOCUS F
ZOOM T
ZOOM W
MAN IRIS
AF MODE
M IRIS
AF CONT
AGC CONT
MAN GAIN
AE IN
X501 8MHz
CAM 4.9V (CN304 ④)
CAM POWER
CAM CS
CAM SO
CAM SI
SCK
LANC IN
LANC OUT
RESET
XINT
IRQ
CCD DET SW
ZOOM KEY
MODE 8
VDD
DA LD 1
DA SS W
JCA
DA LD 0
TG STB
Q506(1/2)
Q505(1/2)
D603
IC508 VOLTAGE DETECT
SS4.9V (CN305 ⑫)
Q504
D502
D501
IC501 (53) SCK (H:20μsec)
4.8Vp-p
IC504 EVR/D-A CONVERTER
CAM 4.9V (CN304 ④)
REF 3.5V (IC652 ①)
REF 1V (IC652 ⑧)
VCC
VDD
VSS
DI
CLK
LD
IRES REF
AGC REF
HALL GAIN
HALL OS
FADER MODE
AF OFF SET
FADER
ZOOM SPEED
M IRIS CONT
M AGC CONT
Q517 BUFFER
IC656 (1/4) M IRIS CONT AMP
M IRIS CONT
IRIS CONT
IRIS REF
HALL OUT
IC656 (1/4) HALL OUT AMP
HALL OS
HALL GAIN
IC655 (1/2) AUTO/MANUAL SW
MAN
AUTO
M IRIS
REF 2V (IC652 ⑭)
IC65 IRIS DR
IC65 BIAS(+)
Q652-654,656 CURRENT LIMITER
AF CONT
FOCUS F
FOCUS N
IC653 ZOOM DRIVER
ZOOM T
ZOOM W
DO
DI
C
M1
M0
VCC
ZOOM SPEED
CN684
POWER (FU-97)
CAM UNREG
CN306
DATA TO MODE
DATA TO CAM
CAM CS
DATA TO MODE
DATA TO CAM
SCK
LANC TO CAM
CAM TO LANC
SYSTEM CONTROL (FD-44)
SYSTEM RESET
AF DISPLAY
DIGITAL TITLER (FD-44)
CN655
JSCK
JSI
JCA
JIG
IC652 V REF
V+
REF 3.5V
REF 2V
REF 1V
(1/2)

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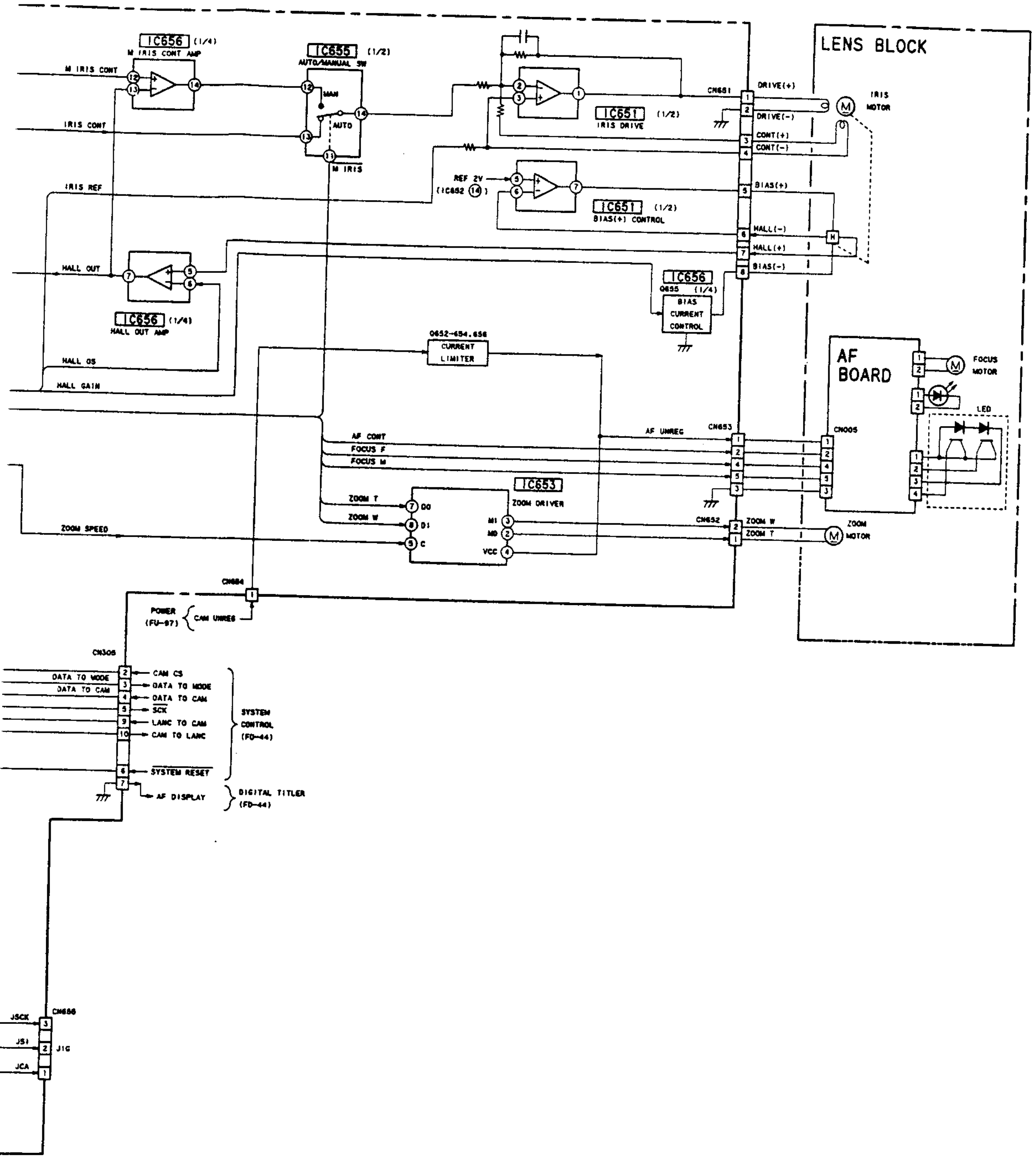
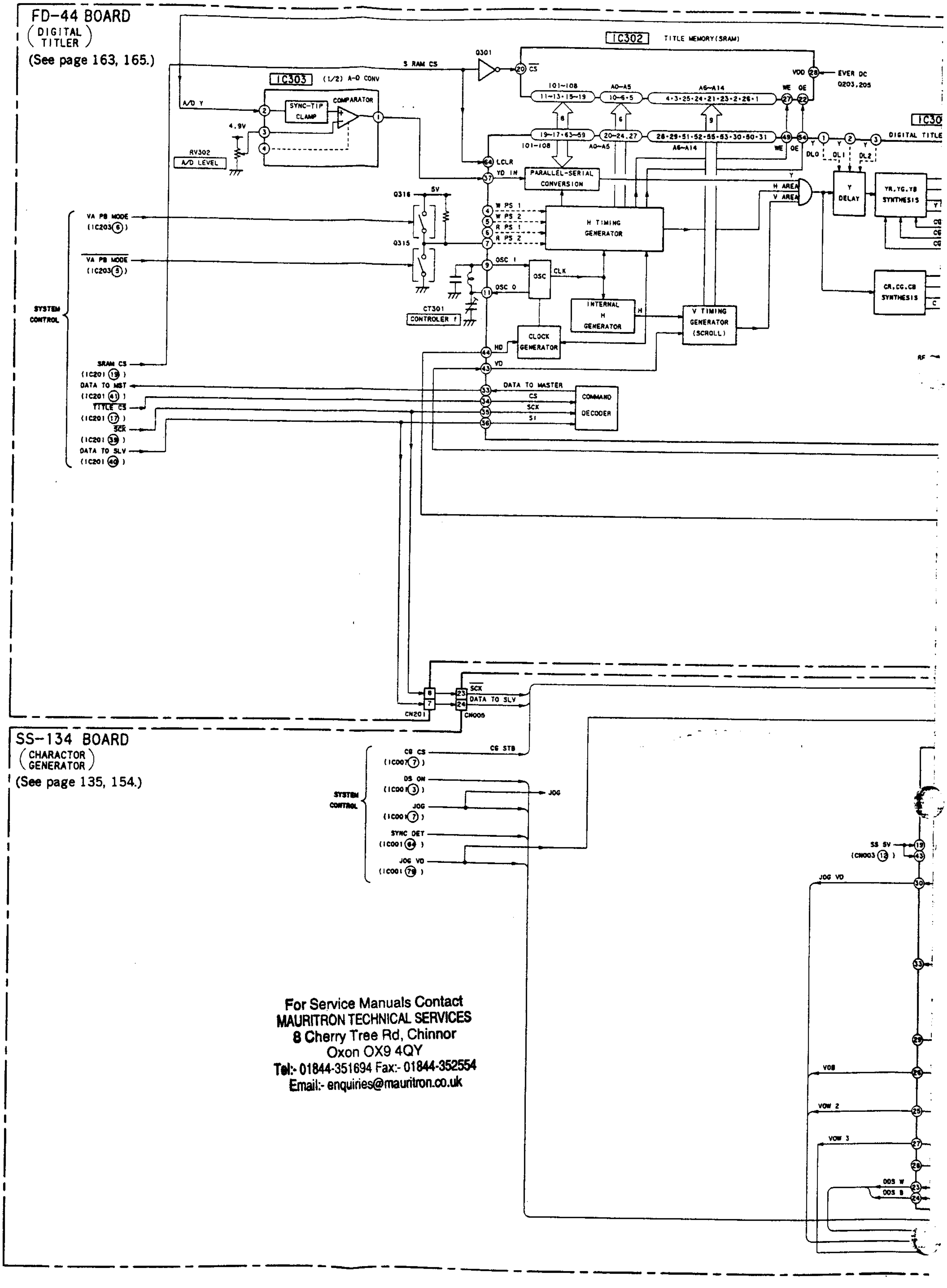

IC656 (1/4)
M IRIS CONT AMP
M IRIS CONT
IRIS CONT
IC655 (1/2)
AUTO/MANUAL SW
MAN
AUTO
M IRIS
IC651 (1/2)
IRIS DRIVE
REF 2V
(IC652 ⑭)
IC651 (1/2)
BIAS(+) CONTROL
IRIS REF
HALL OUT
IC656 (1/4)
HALL OUT AMP
IC656
Q655 (1/4)
BIAS CURRENT CONTROL
HALL OS
HALL GAIN
Q652-654,656
CURRENT LIMITER
AF CONT
FOCUS F
FOCUS M
AF UNREG
IC653
ZOOM DRIVER
ZOOM T
ZOOM W
ZOOM SPEED
D0
D1
C
MI
MO
VCC
CN651
DRIVE(+)
DRIVE(-)
CONT(+)
CONT(-)
BIAS(+)
HALL(-)
HALL(+)
BIAS(-)
CN653
CN652
ZOOM W
ZOOM T
CN654
POWER
(FU-97)
CAM UNREG
CN305
DATA TO MODE
DATA TO CAM
CAM CS
DATA TO MODE
DATA TO CAM
SCK
LANC TO CAM
CAM TO LANC
SYSTEM RESET
SYSTEM CONTROL
(FD-44)
AF DISPLAY
DIGITAL TITLER
(FD-44)
JSCK
JSI
JCA
CN656
JIG
LENS BLOCK
IRIS MOTOR
H
AF BOARD
CN005
FOCUS MOTOR
LED
ZOOM MOTOR

3-6. DIGITAL TITLER BLOCK DIAGRAM


FD-44 BOARD
(DIGITAL TITLER)
(See page 163, 165.)
IC302 TITLE MEMORY (SRAM)
IC303 (1/2) A-D CONV
SYNC-TIP CLAMP
COMPARATOR
A/D Y
4.9V
RV302 A/D LEVEL
S RAM CS
Q301
CS
VDD
EVER DC
Q203, 205
101~108
11~13・15~19
A0~A5
10~6・5
A6~A14
4・3・25・24・21・23・2・26・1
WE OE
19~17・63~59
20~24, 27
28・29・51・52・55・53・30・50・31
DLO
DL1
DL2
DIGITAL TITLE
IC30
LCLR
YD IN
PARALLEL-SERIAL CONVERSION
H AREA
V AREA
Y DELAY
YR, YG, YB SYNTHESIS
CR, CG, CB SYNTHESIS
Q316
Q315
5V
W PS 1
W PS 2
R PS 1
R PS 2
H TIMING GENERATOR
OSC I
OSC O
OSC
CLK
INTERNAL H GENERATOR
V TIMING GENERATOR (SCROLL)
CT301 CONTROLER f
CLOCK GENERATOR
HD
VD
DATA TO MASTER
CS
SCX
SI
COMMAND DECODER
SYSTEM CONTROL
VA PB MODE (IC203⑥)
VA PB MODE (IC203⑤)
SRAM CS (IC201 ⑲)
DATA TO MST (IC201 ㊶)
TITLE CS (IC201 ⑰)
SCK (IC201 ㊴)
DATA TO SLV (IC201 ㊵)
CN201
CN005
SCK
DATA TO SLV
SS-134 BOARD
(CHARACTOR GENERATOR)
(See page 135, 154.)
CG CS (IC007⑦)
CG STB
DS ON (IC001③)
JOG
JOG (IC001⑦)
SYNC DET (IC001 ㊹)
JOG VD (IC001 ㊾)
SS 5V
(CN003 ⑫)
JOG VD
VOB
VOW 2
VOW 3
ODS W
ODS B

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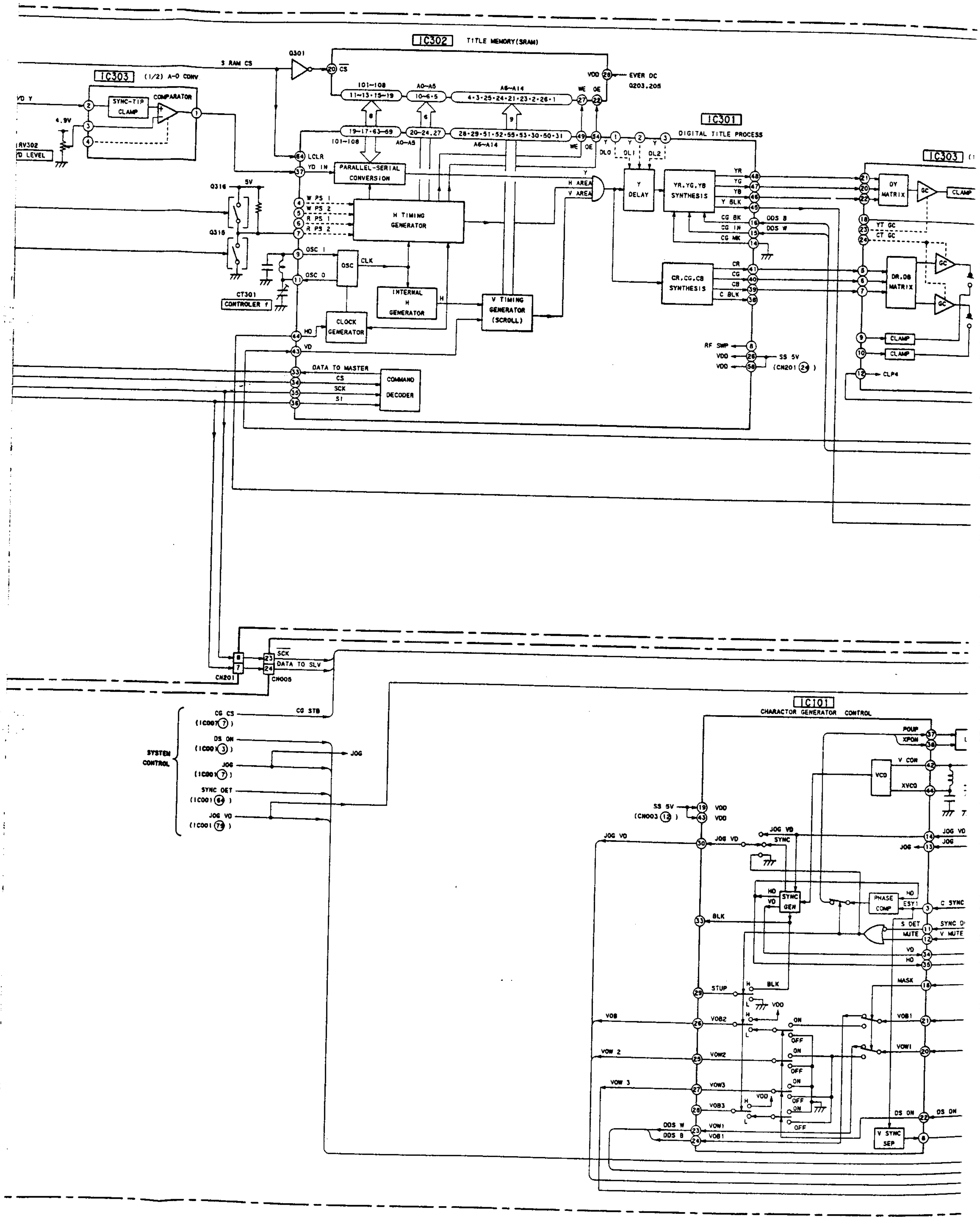
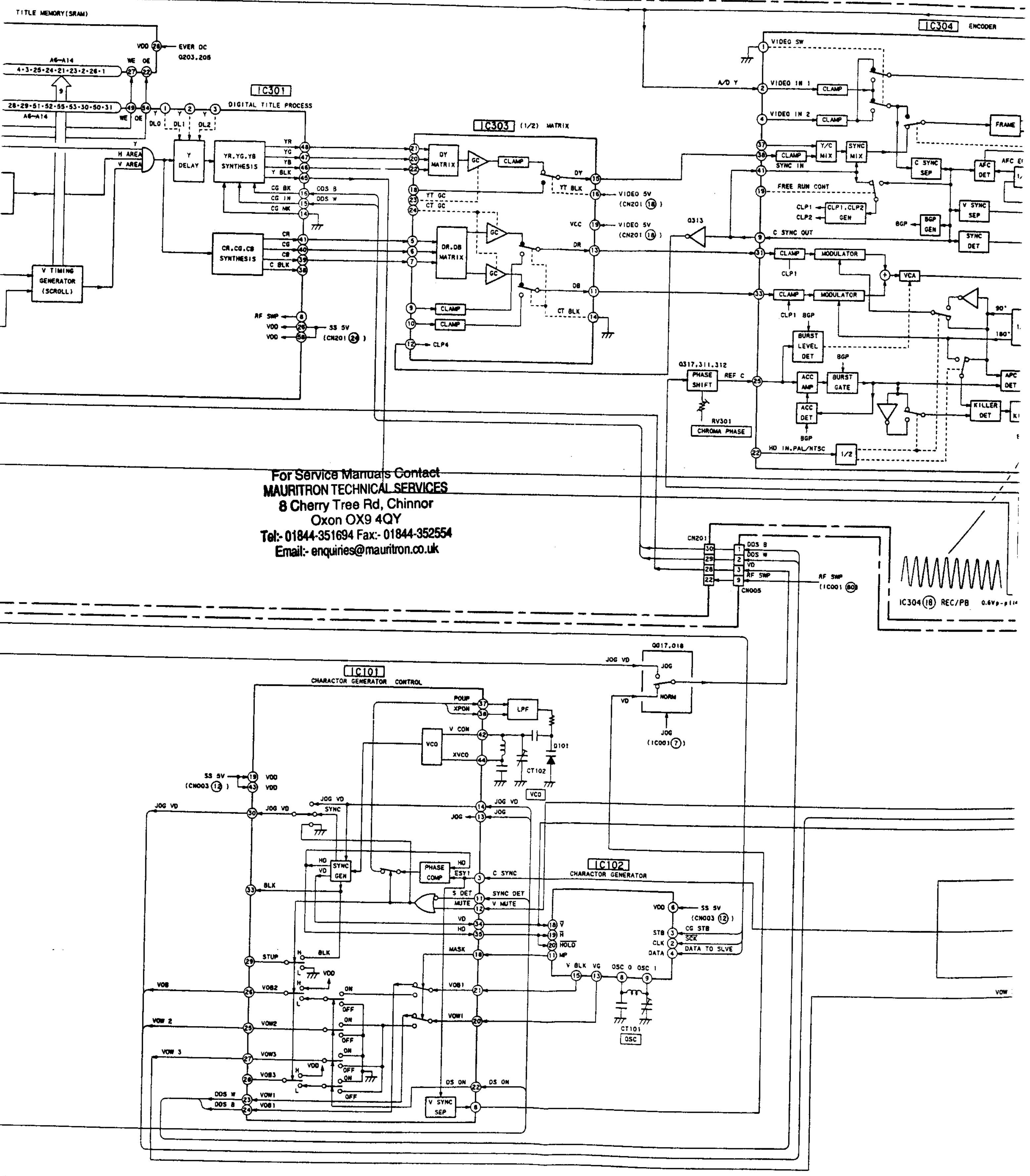
BLOCK DIAGRAM


IC302 TITLE MEMORY(SRAM)
Q301
S RAM CS
CS
VDD
EVER DC
Q203,205
101~108
11~13·15~19
A0~A5
10~6·5
A6~A14
4·3·25·24·21·23·2·26·1
WE
OE
IC303 (1/2) A-D CONV
VD Y
SYNC-TIP CLAMP
COMPARATOR
4.9V
RV302
VD LEVEL
19~17·63~69
20~24.27
28·29·51·52·55·53·30·50·31
IC301
DIGITAL TITLE PROCESS
LCLR
YD IN
PARALLEL-SERIAL CONVERSION
DL0
DL1
DL2
Y DELAY
YR,YG,YB SYNTHESIS
YR
YG
YB
Y BLK
CG BK
CG IN
CG MK
DDS B
DDS W
H AREA
V AREA
Q316
Q315
5V
W PS 1
W PS 2
R PS 1
R PS 2
H TIMING GENERATOR
OSC I
OSC O
OSC
CLK
INTERNAL H GENERATOR
V TIMING GENERATOR (SCROLL)
CLOCK GENERATOR
CT301
CONTROLER f
HD
VD
CR,CG,CB SYNTHESIS
CR
CG
CB
C BLK
RF SWP
VDD
SS 5V
(CN201 24)
DATA TO MASTER
CS
SCK
SI
COMMAND DECODER
IC303
DY MATRIX
GC
CLAMP
YT GC
CT GC
DR.DB MATRIX
CLAMP
CLP4
CN201
CN005
SCK
DATA TO SLV
CG CS
(IC007 7)
DS ON
(IC001 3)
JOG
(IC001 7)
SYNC DET
(IC001 64)
JOG VD
(IC001 79)
SYSTEM CONTROL
CG STB
JOG
IC101
CHARACTOR GENERATOR CONTROL
POUP
XPON
V CON
VCO
XVCO
SS 5V
(CN003 12)
VDD
JOG VD
SYNC
JOG
SYNC GEN
PHASE COMP
ESY1
C SYNC
S DET
MUTE
SYNC O
V MUTE
BLK
STUP
MASK
VOB
VOB2
VOB1
VOW 2
VOW2
VOW1
VOW 3
VOW3
VOB3
ON
OFF
DDS W
DDS B
DS ON
V SYNC SEP



TITLE MEMORY(SRAM)
VDD 28 EVER DC Q203,205
A6—A14
WE OE
27 22
4·3·25·24·21·23·2·26·1
28·29·51·52·55·53·30·50·31
49 54
IC301 DIGITAL TITLE PROCESS
DL0 DL1 DL2
H AREA
V AREA
Y DELAY
YR.YG.YB SYNTHESIS
YR YG YB Y BLK
CG BK CG IN CG MK
DOS B DOS W
CR.CG.CB SYNTHESIS
CR CG CB C BLK
V TIMING GENERATOR (SCROLL)
RF SWP VDD VDD
SS 5V (CN201 24)
IC303 (1/2) MATRIX
DY MATRIX
GC
CLAMP
DY
YT BLK
YT GC
CT GC
DR.DB MATRIX
DR
DB
CT BLK
VCC
VIDEO 5V (CN201 18)
CLP4
IC304 ENCODER
VIDEO SW
A/D Y
VIDEO IN 1
VIDEO IN 2
FRAME
Y/C MIX
SYNC MIX
SYNC IN
FREE RUN CONT
CLP1,CLP2 GEN
C SYNC SEP
AFC DET
V SYNC SEP
BGP GEN
SYNC DET
Q313
C SYNC OUT
MODULATOR
VCA
CLP1 BGP
BURST LEVEL DET
90°
180°
Q317,311,312
PHASE SHIFT
REF C
ACC AMP
BURST GATE
APC DET
ACC DET
KILLER DET
RV301 CHROMA PHASE
HD IN.PAL/NTSC
1/2
CN201
CN005
DOS B DOS W VD RF SWP
RF SWP (IC001 80)
IC304 18 REC/PB 0.6Vp-p
Q017,018
JOG VD
JOG
NORM
VD
JOG (IC001 7)
IC101 CHARACTOR GENERATOR CONTROL
POUP XPON
LPF
VCO
V CON XVCO
D101
CT102
VCO
SS 5V (CN003 12)
VDD
JOG VD
SYNC
SYNC GEN
HD VD
PHASE COMP
ESYT
C SYNC
S DET SYNC DET
MUTE V MUTE
BLK
STUP
MASK
VOB VOB2 VOB1
VOW 2 VOW2 VOW1
VOW 3 VOW3 VOB3
ON OFF
DS ON
V SYNC SEP
DOS W DOS B
IC102 CHARACTOR GENERATOR
SS 5V (CN003 12)
STB CLK DATA
CG STB SCK DATA TO SLVE
V BLK VG OSC 0 OSC 1
HOLD MP
CT101 OSC
VOW

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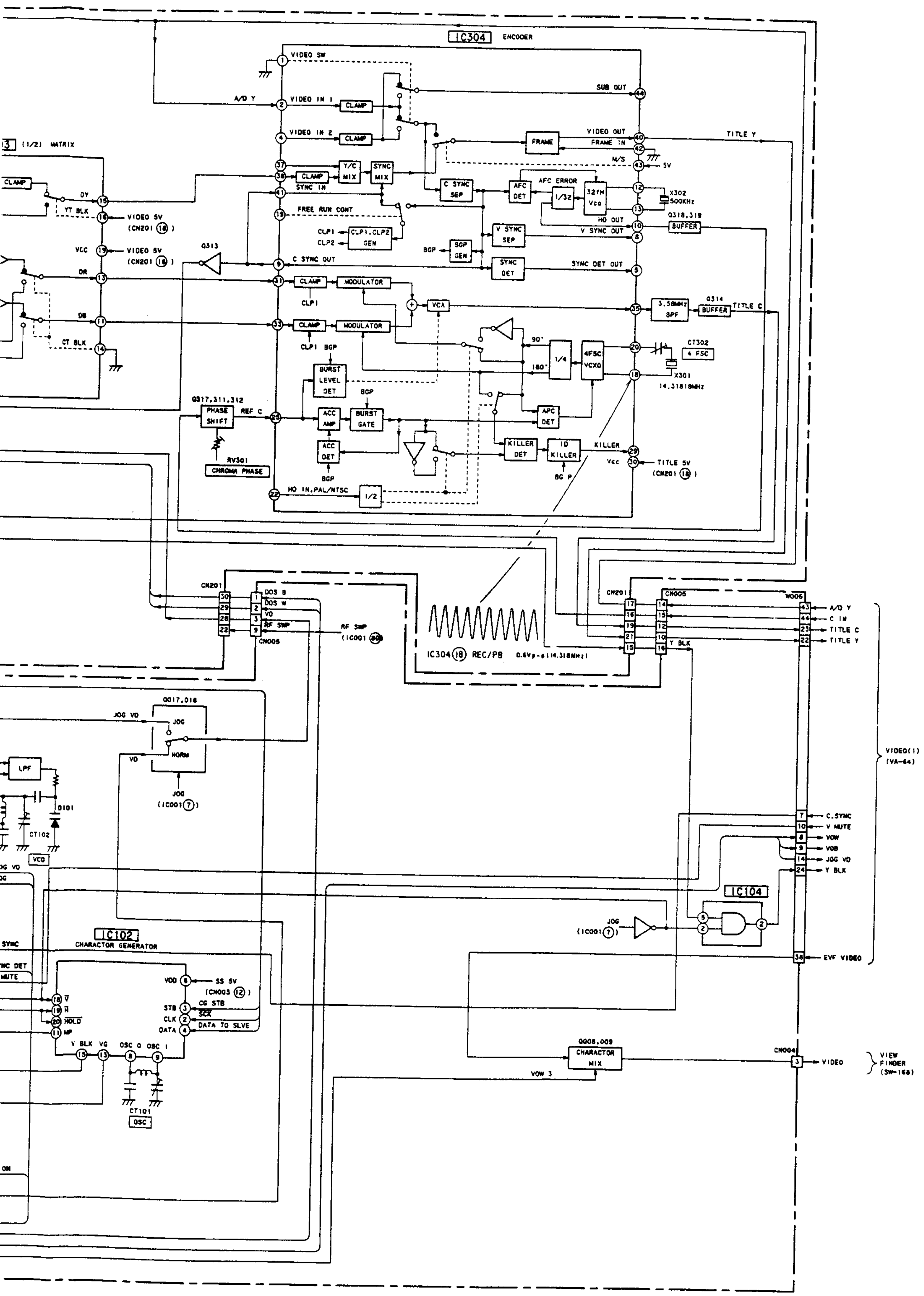
IC304 ENCODER
VIDEO SW
A/D Y
VIDEO IN 1
VIDEO IN 2
CLAMP
SUB OUT
VIDEO OUT
FRAME IN
FRAME
TITLE Y
M/S
5V
(1/2) MATRIX
CLAMP
DY
YT BLK
VIDEO 5V
(CN201 ⑱)
VCC
DR
DB
CT BLK
T/C MIX
SYNC MIX
SYNC IN
FREE RUN CONT
CLP1
CLP2
CLP1,CLP2 GEN
C SYNC SEP
AFC DET
AFC ERROR
1/32
32fH Vco
X302
500KHz
HD OUT
V SYNC OUT
Q318,319
BUFFER
V SYNC SEP
BGP
SGP GEN
SYNC DET
SYNC DET OUT
Q313
C SYNC OUT
MODULATOR
VCA
3.58MHz BPF
Q314
BUFFER
TITLE C
90°
180°
1/4
4FSC VCXO
CT302
4 FSC
X301
14.31818MHz
BURST LEVEL DET
Q317,311,312
PHASE SHIFT
REF C
ACC AMP
BURST GATE
APC DET
ACC DET
KILLER DET
ID KILLER
KILLER
BG P
Vcc
TITLE 5V
(CN201 ⑱)
RV301
CHROMA PHASE
HD IN,PAL/NTSC
1/2
CN201
DOS B
DOS W
VD
RF SWP
CN005
RF SWP
(IC001 ⑳)
IC304 ⑱ REC/PB 0.6Vp-p(14.318MHz)
W006
A/D Y
C IN
TITLE C
TITLE Y
Y BLK
VIDEO(1)
(VA-64)
Q017,018
JOG VD
JOG
NORM
VD
JOG
(IC001 ⑦)
LPF
D101
CT102
VCO
C.SYNC
V MUTE
VOW
VOB
JOG VD
Y BLK
IC104
JOG
(IC001 ⑦)
EVF VIDEO
IC102
CHARACTOR GENERATOR
SYNC
SYNC DET
MUTE
VDD
SS 5V
(CN003 ⑫)
STB
CG STB
CLK
SCK
DATA
DATA TO SLVE
V̄
H̄
HOLD
MP
V BLK
VG
OSC 0
OSC 1
CT101
OSC
Q008,009
CHARACTOR MIX
VOW 3
CN004
VIDEO
VIEW FINDER
(SW-168)
ON

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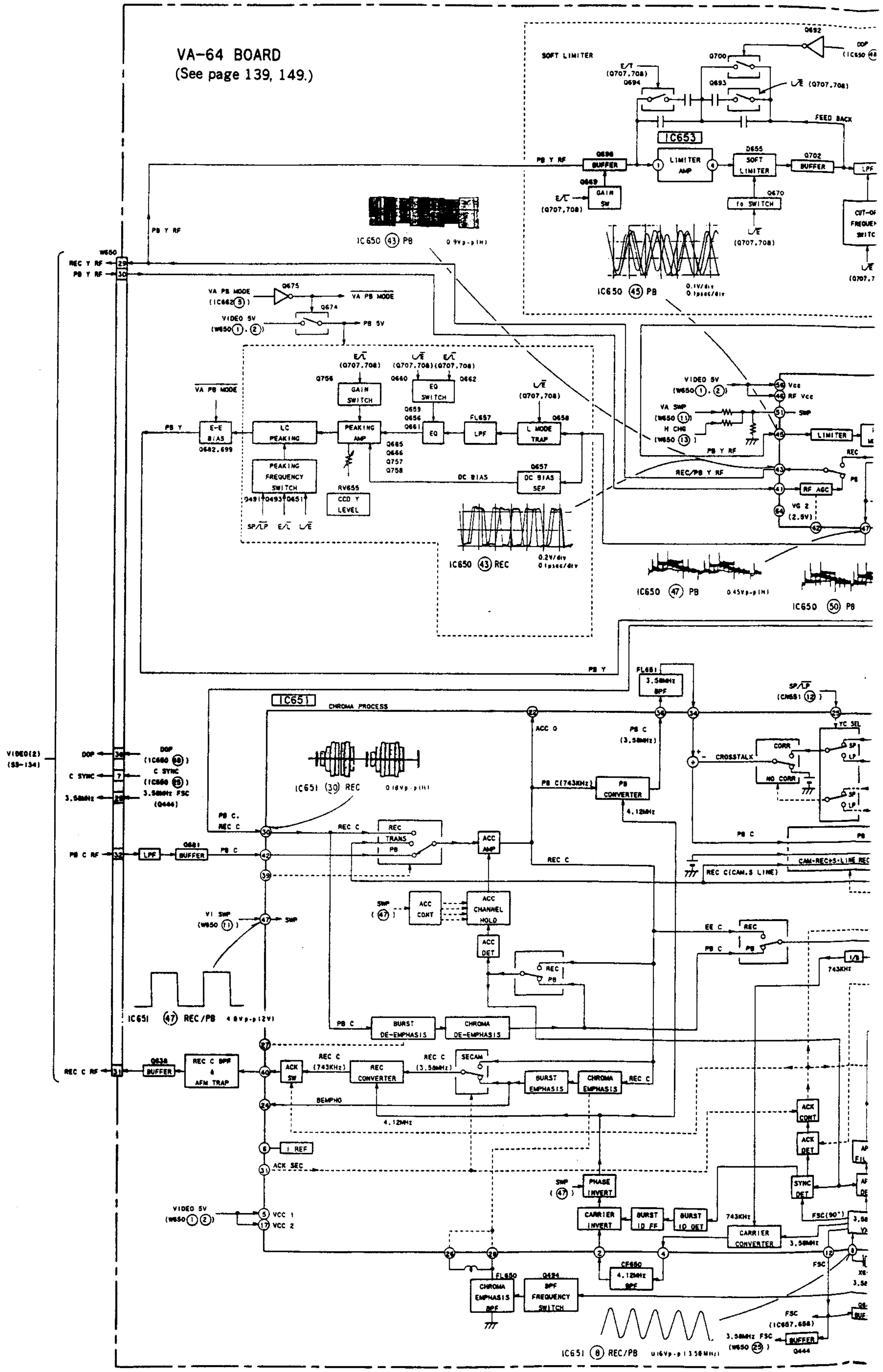
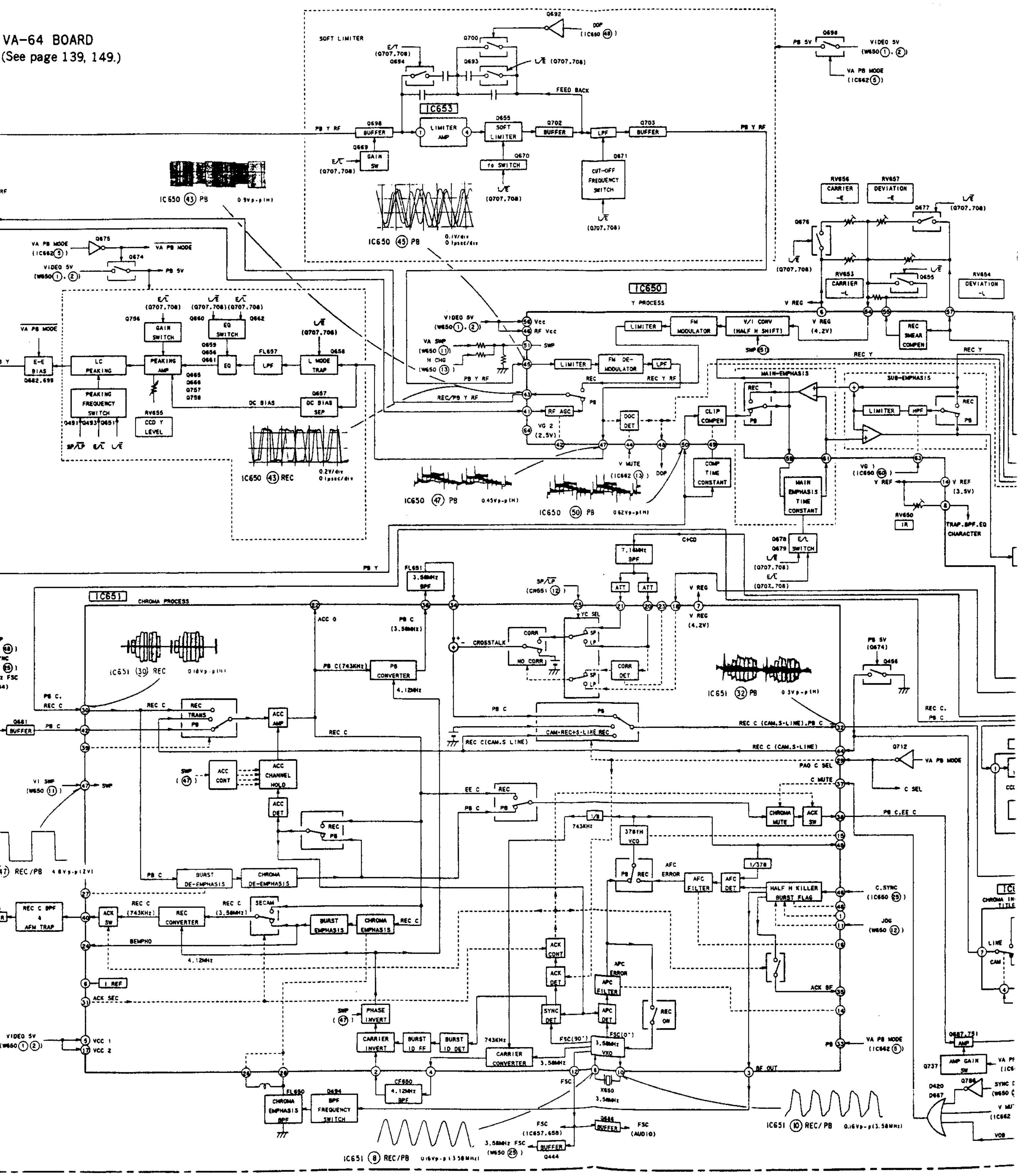
3-7. VIDEO (1) BLOCK DIAGRAM


VA-64 BOARD
(See page 139, 149.)
SOFT LIMITER
Q692
DOP
(IC650 (48)
Q700
E/T
(Q707,708)
Q694
Q693
L/E (Q707,708)
FEED BACK
IC653
PB Y RF
Q696
BUFFER
LIMITER AMP
D655
SOFT LIMITER
Q702
BUFFER
LPF
Q669
GAIN SW
E/L
(Q707,708)
Q670
fo SWITCH
L/E
(Q707,708)
CUT-OFF FREQUENCY SWITCH
IC650 (45) PB
0.1V/div
0.1µsec/div
IC650 (43) PB
0.9Vp-p(H)
PB Y RF
W650
REC Y RF
PB Y RF
29
30
VA PB MODE
(IC662 (5))
Q675
VA PB MODE
Q674
VIDEO 5V
(W650 (1), (2))
PB 5V
E/L
(Q707,708)
L/E
E/L
(Q707,708)(Q707,708)
Q756
GAIN SWITCH
Q660
EQ SWITCH
Q662
L/E
(Q707,708)
VA PB MODE
PB Y
E-E BIAS
Q682,699
LC PEAKING
PEAKING AMP
Q659
Q656
Q661
EQ
FL657
LPF
L MODE TRAP
Q658
Q665
Q666
Q757
Q758
PEAKING FREQUENCY SWITCH
Q491 Q493 Q651
SP/LP E/L L/E
RV655
CCD Y LEVEL
DC BIAS
Q657
DC BIAS SEP
IC650 (43) REC
0.2V/div
0.1µsec/div
VIDEO 5V
(W650 (1), (2))
(56) Vcc
(46) RF Vcc
VA SWP
(W650 (11))
(51) SWP
H CHG
(W650 (13))
(45)
LIMITER
PB Y RF
REC
REC/PB Y RF
(43)
PB
(41)
RF AGC
(64)
VG 2
(2.5V)
(42)
(47)
IC650 (47) PB
0.45Vp-p(H)
IC650 (50) PB
PB Y
FL661
3.58MHz BPF
SP/LP
(CN651 (12))
YC SEL
VIDEO(2)
(SS-134)
DOP
36
DOP
(IC650 (68))
C SYNC
7
C SYNC
(IC650 (25))
3.58MHz
28
3.58MHz FSC
(Q444)
IC651
CHROMA PROCESS
(22)
ACC O
(36)
(34)
IC651 (30) REC
0.18Vp-p(H)
PB C
(3.58MHz)
CROSSTALK
CORR
NO CORR
SP
LP
PB C(743KHz)
PB CONVERTER
4.12MHz
PB C.
REC C
(30)
REC C
REC
TRANS
PB
ACC AMP
PB C
PB
CAM•REC+S•LINE REC
REC C
REC C(CAM,S LINE)
PB C RF
32
LPF
Q681
BUFFER
PB C
(42)
(39)
SWP
((47))
ACC CONT
ACC CHANNEL HOLD
ACC DET
REC
PB
EE C
REC
PB C
PB
1/8
743KHz
VI SWP
(W650 (11))
(47) SWP
IC651 (47) REC/PB 4.8Vp-p(2V)
PB C
BURST DE-EMPHASIS
CHROMA DE-EMPHASIS
(27)
REC C RF
31
Q638
BUFFER
REC C BPF & AFM TRAP
(40)
ACK SW
REC C
(743KHz)
REC CONVERTER
REC C
(3.58MHz)
SECAM
BURST EMPHASIS
CHROMA EMPHASIS
REC C
BEMPHO
(24)
4.12MHz
ACK CONT
ACK DET
(6)
I REF
(31)
ACK SEC
SWP
((47))
PHASE INVERT
SYNC DET
VIDEO 5V
(W650 (1) (2))
(5) VCC 1
(17) VCC 2
CARRIER INVERT
BURST ID FF
BURST ID DET
743KHz
FSC(90°)
CARRIER CONVERTER
3.58MHz
(26)
(28)
(2)
(4)
(12)
(8)
FSC
FL650
CHROMA EMPHASIS BPF
Q494
BPF FREQUENCY SWITCH
CF650
4.12MHz BPF
FSC
(IC657,658)
3.58MHz FSC
(W650 (25))
BUFFER
Q444
IC651 (8) REC/PB 0.16Vp-p(3.58MHz)

VA-64 BOARD
(See page 139, 149.)


SOFT LIMITER
IC653
LIMITER AMP
SOFT LIMITER
BUFFER
GAIN SW
fo SWITCH
LPF
CUT-OFF FREQUENCY SWITCH
FEED BACK
PB Y RF
DOP
VIDEO 5V
VA PB MODE
IC650 (43) PB
IC650 (45) PB
IC650
Y PROCESS
FM MODULATOR
V/I CONV (HALF H SHIFT)
LIMITER
FM DE-MODULATOR
REC SMEAR COMPEN
CARRIER -E
DEVIATION -E
CARRIER -L
DEVIATION -L
MAIN-EMPHASIS
SUB-EMPHASIS
HPF
CLIP COMPEN
DOC DET
RF AGC
COMP TIME CONSTANT
MAIN EMPHASIS TIME CONSTANT
E-E BIAS
LC PEAKING
PEAKING AMP
PEAKING FREQUENCY SWITCH
GAIN SWITCH
EQ SWITCH
EQ
L MODE TRAP
DC BIAS SEP
CCD Y LEVEL
IC650 (43) REC
IC650 (47) PB
IC650 (50) PB
TRAP.BPF.EQ CHARACTER
7.16MHz BPF
ATT
E/L SWITCH
IC651
CHROMA PROCESS
3.58MHz BPF
PB CONVERTER
CROSSTALK
CORR
NO CORR
CORR DET
YC SEL
IC651 (30) REC
IC651 (32) PB
REC TRANS
ACC AMP
ACC CONT
ACC CHANNEL HOLD
ACC DET
CAM-REC+S-LINE REC
CHROMA MUTE
ACK SW
1/8
378fH VCO
AFC ERROR
AFC FILTER
AFC DET
1/378
HALF H KILLER BURST FLAG
BURST DE-EMPHASIS
CHROMA DE-EMPHASIS
REC C BPF & AFM TRAP
REC CONVERTER
SECAM
BURST EMPHASIS
CHROMA EMPHASIS
ACK CONT
ACK DET
APC FILTER
APC DET
SYNC DET
PHASE INVERT
CARRIER INVERT
BURST ID FF
BURST ID DET
CARRIER CONVERTER
3.58MHz VXO
REC ON
CHROMA EMPHASIS BPF
BPF FREQUENCY SWITCH
4.12MHz BPF
BUFFER
IC651 (8) REC/PB
IC651 (10) REC/PB
(47) REC/PB
AMP GAIN SW
LINE
CAM

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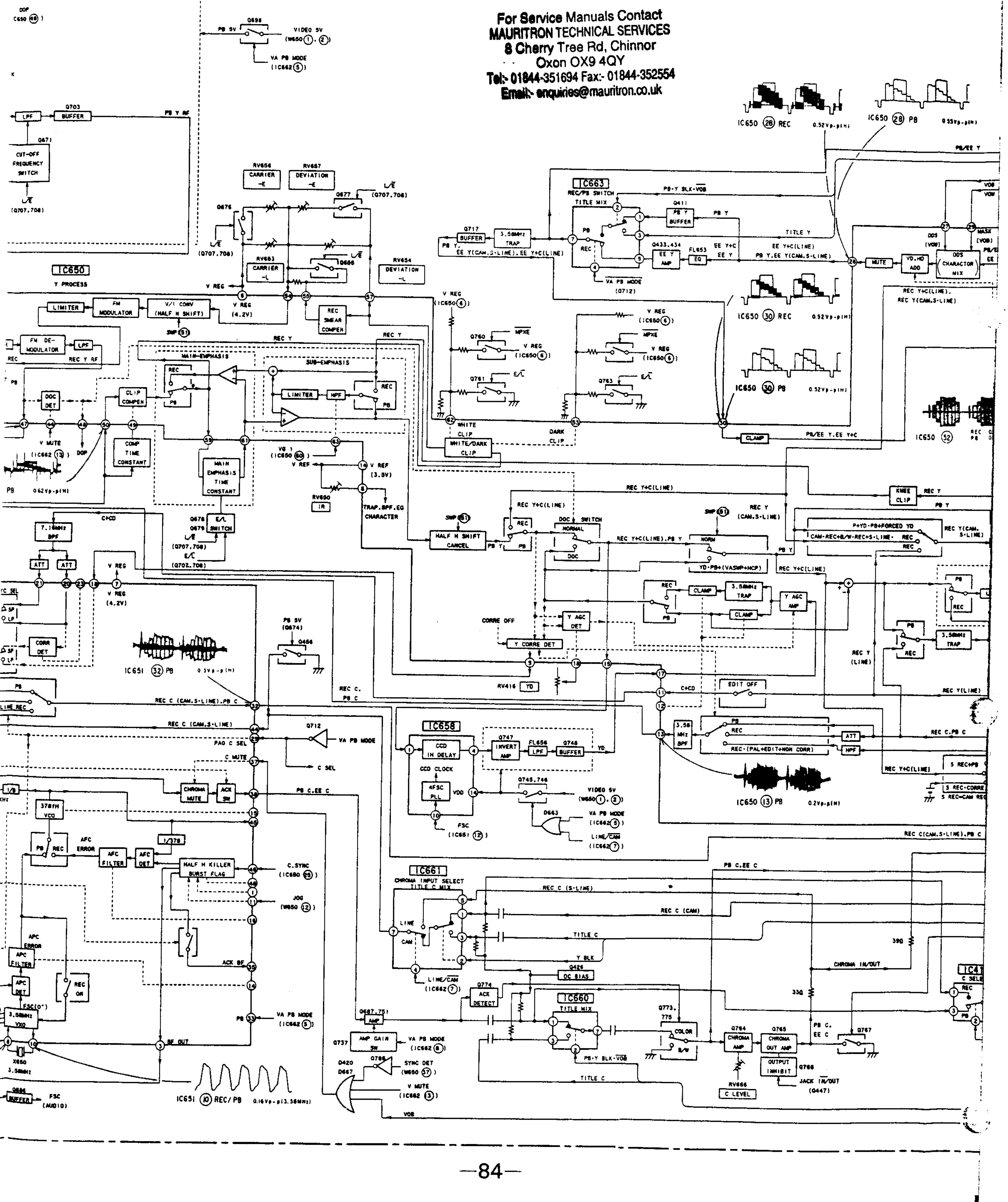
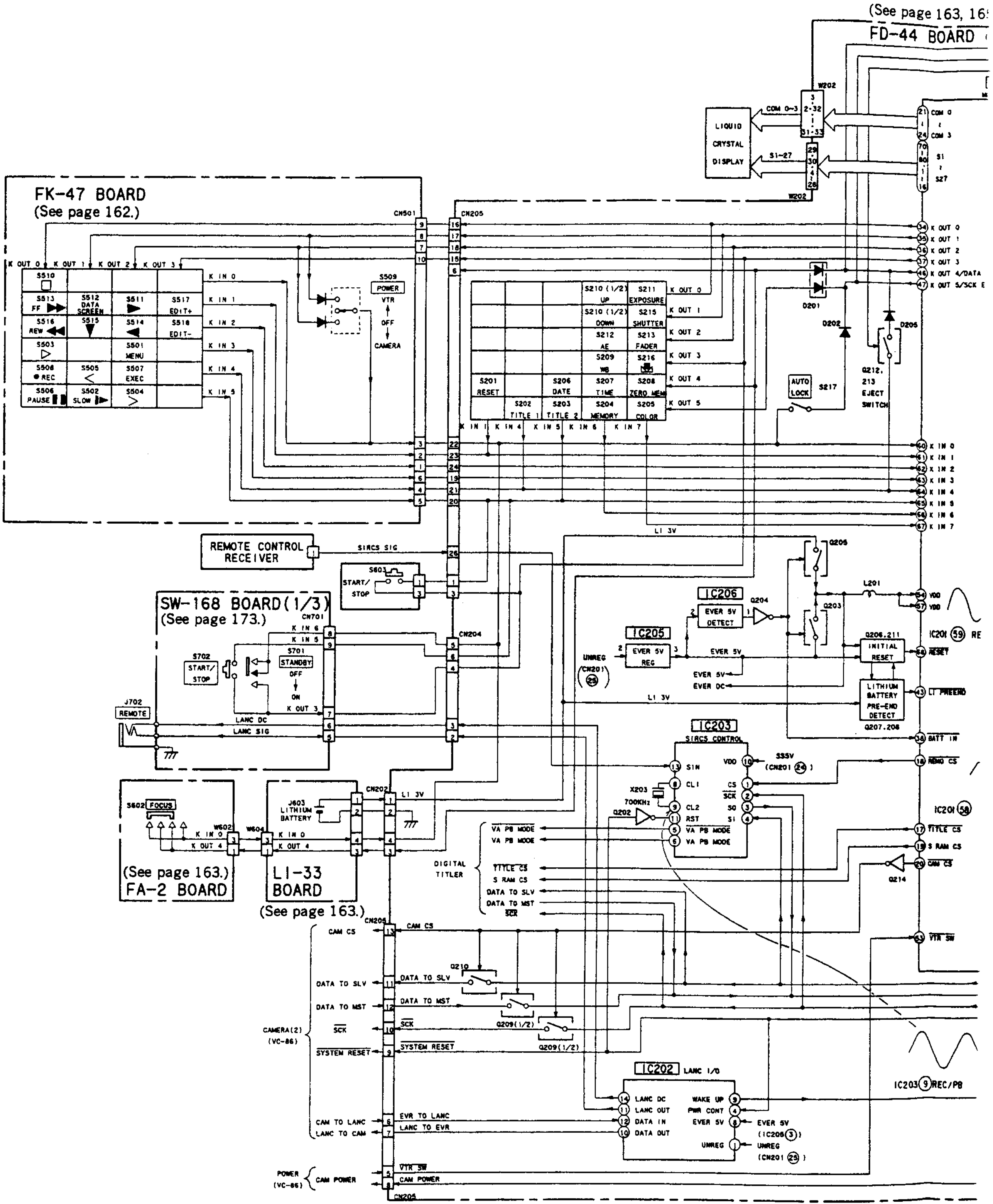

IC650 Y PROCESS
Q698 VIDEO 5V
Q703 BUFFER
LPF
CUT-OFF FREQUENCY SWITCH
RV656 CARRIER -E
RV657 DEVIATION -E
RV653 CARRIER -L
RV654 DEVIATION -L
LIMITER
FM MODULATOR
V/I CONV (HALF H SHIFT)
FM DE-MODULATOR
REC SMEAR COMPEN
MAIN-EMPHASIS
SUB-EMPHASIS
DOC DET
CLIP COMPEN
COMP TIME CONSTANT
MAIN EMPHASIS TIME CONSTANT
E/L SWITCH
7.16MHz BPF
ATT
CORR DET
IC651 (32) PB
IC651 (10) REC/PB
378fH VCO
1/378
AFC FILTER
AFC DET
APC FILTER
APC DET
3.58MHz VXO
X650 3.58MHz
HALF H KILLER BURST FLAG
CHROMA MUTE
ACK SW
BF OUT
Q686 BUFFER
IC663 REC/PB SWITCH TITLE MIX
Q411 PB Y BUFFER
Q433,434 EE Y AMP
FL653 EQ
Q717 BUFFER
3.58MHz TRAP
IC650 (28) REC
IC650 (28) PB
IC650 (30) REC
IC650 (30) PB
IC650 (52)
WHITE/DARK CLIP
CLAMP
MUTE
YD,HD ADD
DOS CHARACTOR MIX
KNEE CLIP
HALF H SHIFT CANCEL
NORMAL
DOC
Y AGC DET
Y CORRE DET
Y AGC AMP
RV650 IR
RV416 YD
EDIT OFF
IC658 CCD 1H DELAY
4FSC PLL
Q747 INVERT AMP
FL656 LPF
Q748 BUFFER
IC650 (13) PB
3.58MHz BPF
ATT
HPF
IC661 CHROMA INPUT SELECT TITLE C MIX
IC660 TITLE MIX
Q426 DC BIAS
Q774 ACK DETECT
Q687,751 AMP
AMP GAIN SW
COLOR B/W
Q764 CHROMA AMP
Q765 CHROMA OUT AMP
OUTPUT INHIBIT
RV666 C LEVEL
JACK IN/OUT (Q447)
IC41 C SELE

3-9. SYSTEM CONTROL BLOCK DIAGRAM


(See page 163, 16
FD-44 BOARD
LIQUID CRYSTAL DISPLAY
COM 0-3
S1-27
W202
COM 0
COM 3
S1
S27
FK-47 BOARD
(See page 162.)
CN501
CN205
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K OUT 4/DATA
K OUT 5/SCK E
S510
S513 FF
S512 DATA SCREEN
S511
S517 EDIT+
S516 REW
S515
S514
S518 EDIT-
S503
S501 MENU
S508 REC
S505
S507 EXEC
S506 PAUSE
S502 SLOW
S504
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K IN 7
S509 POWER
VTR
OFF
CAMERA
S210 (1/2) UP
S211 EXPOSURE
S210 (1/2) DOWN
S215 SHUTTER
S212 AE
S213 FADER
S209 WB
S216
S201 RESET
S206 DATE
S207 TIME
S208 ZERO MEM
S202 TITLE 1
S203 TITLE 2
S204 MEMORY
S205 COLOR
D201
D202
D205
AUTO LOCK
S217
Q212, 213 EJECT SWITCH
REMOTE CONTROL RECEIVER
SIRCS SIG
S603 START/STOP
SW-168 BOARD (1/3)
(See page 173.)
CN701
S702 START/STOP
S701 STANDBY
OFF
ON
J702 REMOTE
LANC DC
LANC SIG
CN204
L1 3V
Q205
IC206 EVER 5V DETECT
Q204
Q203
L201
VDD
IC201 (59) RE
Q206,211 INITIAL RESET
RESET
IC205 EVER 5V REG
UNREG (CN201 (25))
EVER 5V
EVER DC
LITHIUM BATTERY PRE-END DETECT
Q207,208
LI PREEND
BATT IN
IC203 SIRCS CONTROL
SIN
CL1
CL2
RST
VA PB MODE
VDD
CS
SCK
SO
SI
335V (CN201 (24))
X203 700KHz
Q202
REMO CS
IC201 (58)
TITLE CS
S RAM CS
CAM CS
Q214
DIGITAL TITLER
DATA TO SLV
DATA TO MST
SCK
S602 FOCUS
W602
W604
FA-2 BOARD
(See page 163.)
J603 LITHIUM BATTERY
LI-33 BOARD
(See page 163.)
CN202
CN206
CAMERA(2) (VC-86)
Q210
Q209(1/2)
SYSTEM RESET
VTR SW
IC202 LANC I/O
LANC DC
LANC OUT
DATA IN
DATA OUT
WAKE UP
PWR CONT
EVER 5V
UNREG
EVER 5V (IC206 (3))
UNREG (CN201 (25))
CAM TO LANC
LANC TO CAM
EVR TO LANC
LANC TO EVR
POWER (VC-86)
CAM POWER
IC203 (9) REC/PB

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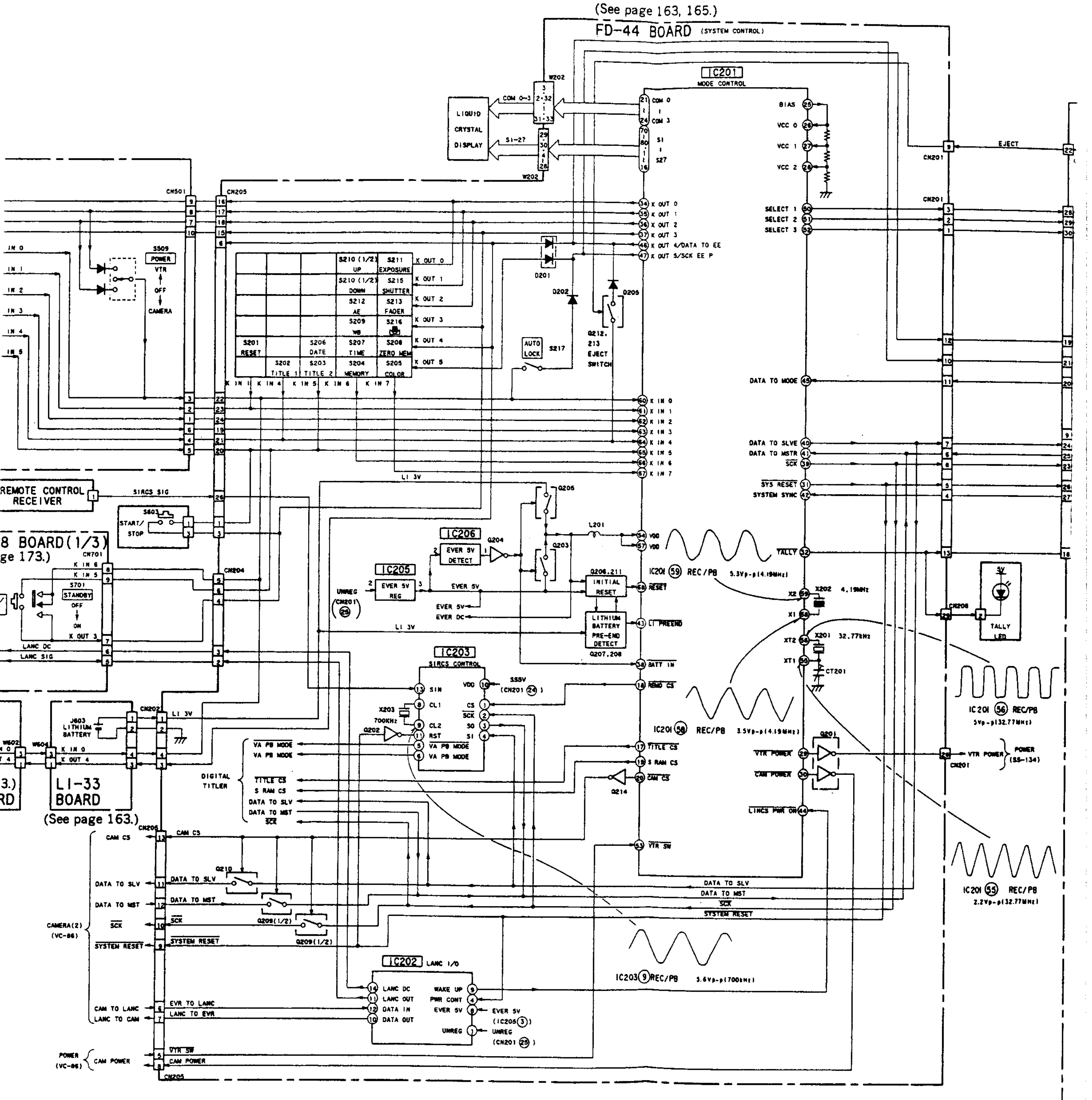
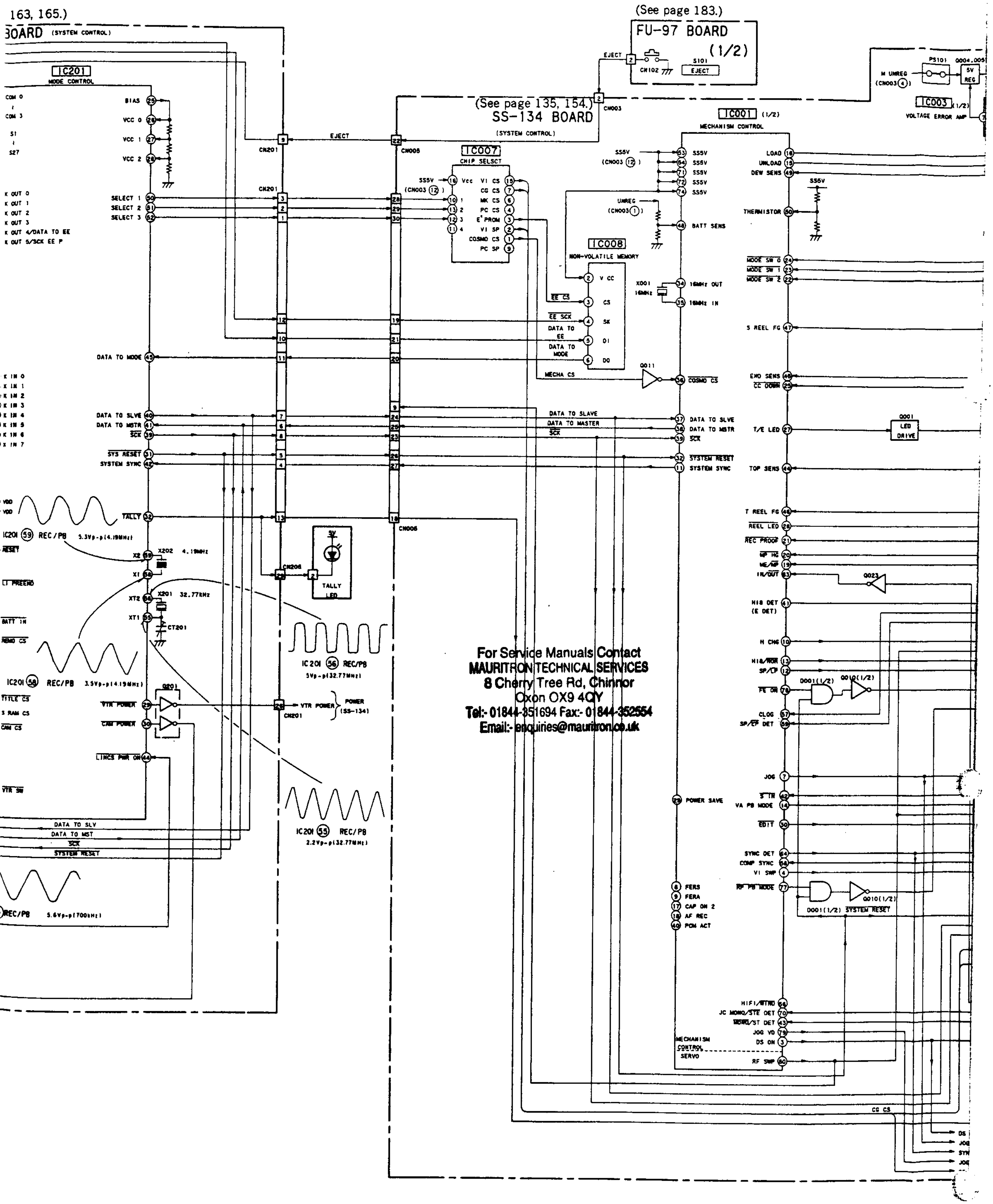

(See page 163, 165.)
FD-44 BOARD (SYSTEM CONTROL)
IC201 MODE CONTROL
LIQUID CRYSTAL DISPLAY
COM 0-3
S1-27
W202
COM 0
COM 3
S1
S27
BIAS
VCC 0
VCC 1
VCC 2
EJECT
CN201
SELECT 1
SELECT 2
SELECT 3
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K OUT 4/DATA TO EE
K OUT 5/SCK EE P
D201
D202
D205
Q212, 213 EJECT SWITCH
AUTO LOCK
S217
CN501
CN205
S509 POWER
VTR
OFF
CAMERA
S210 (1/2) UP
S211 EXPOSURE
S210 (1/2) DOWN
S215 SHUTTER
S212 AE
S213 FADER
S209 WB
S216
S201 RESET
S206 DATE
S207 TIME
S208 ZERO MEM
S202 TITLE 1
S203 TITLE 2
S204 MEMORY
S205 COLOR
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K IN 7
DATA TO MODE
DATA TO SLVE
DATA TO MSTR
SCK
SYS RESET
SYSTEM SYNC
REMOTE CONTROL RECEIVER
SIRCS SIG
S603 START/STOP
LI 3V
Q205
Q204
Q203
L201
VDD
IC206 EVER 5V DETECT
IC205 EVER 5V REG
UNREG (CN201 (25))
EVER 5V
EVER DC
Q206, 211 INITIAL RESET
LITHIUM BATTERY PRE-END DETECT
Q207, 208
RESET
LI PREEND
BATT IN
IC201 (59) REC/PB 5.3Vp-p(4.19MHz)
TALLY
X2
X1
X202 4.19MHz
XT2
XT1
X201 32.77kHz
CT201
CN206
TALLY LED
5V
8 BOARD (1/3)
ge 173.)
CN701
K IN 6
K IN 5
S701 STANDBY
OFF
ON
X OUT 3
LANC DC
LANC SIG
CN204
IC203 SIRCS CONTROL
SIN
CL1
CL2
RST
VA PB MODE
VDD
S5V (CN201 (24))
CS
SCK
SO
SI
X203 700KHz
Q202
REMO CS
IC201 (56) REC/PB 5Vp-p(32.77MHz)
IC201 (58) REC/PB 3.5Vp-p(4.19MHz)
TITLE CS
S RAM CS
CAM CS
Q214
Q201
VTR POWER
CAM POWER
LINCS PWR ON
POWER (SS-134)
VTR SW
DIGITAL TITLER
DATA TO SLV
DATA TO MST
SYSTEM RESET
IC201 (55) REC/PB 2.2Vp-p(32.77MHz)
J603 LITHIUM BATTERY
CN202
W602
W604
K IN 0
K OUT 4
LI-33 BOARD
(See page 163.)
3.)
RD
CN206
CAMERA(2) (VC-86)
CAM CS
Q210
Q209(1/2)
IC203 (9) REC/PB 3.6Vp-p(700kHz)
IC202 LANC I/O
LANC DC
LANC OUT
DATA IN
DATA OUT
WAKE UP
PWR CONT
EVER 5V
UNREG
EVER 5V (IC205 (3))
UNREG (CN201 (25))
CAM TO LANC
LANC TO CAM
EVR TO LANC
LANC TO EVR
POWER (VC-86)
CAM POWER
VTR SW
CN205



163, 165.)
3OARD (SYSTEM CONTROL)
(See page 183.)
FU-97 BOARD
(1/2)
EJECT
S101
EJECT
CN102
(See page 135, 154.)
SS-134 BOARD
(SYSTEM CONTROL)
CN003
IC201
MODE CONTROL
BIAS
VCC 0
VCC 1
VCC 2
SELECT 1
SELECT 2
SELECT 3
DATA TO MODE
DATA TO SLVE
DATA TO MSTR
SCK
SYS RESET
SYSTEM SYNC
TALLY
IC201 (59) REC/PB 5.3Vp-p(4.19MHz)
X202 4.19MHz
X2
X1
X201 32.77kHz
XT2
XT1
CT201
IC201 (58) REC/PB 3.5Vp-p(4.19MHz)
Q201
VTR POWER
CAM POWER
LINCS PWR ON
DATA TO SLV
DATA TO MST
SCK
SYSTEM RESET
REC/PB 5.6Vp-p(700kHz)
CN201
EJECT
CN006
CN206
TALLY LED
5V
VTR POWER
POWER (SS-134)
IC201 (56) REC/PB 5Vp-p(32.77MHz)
IC201 (55) REC/PB 2.2Vp-p(32.77MHz)
IC007
CHIP SELSCT
SS5V
(CN003 (12))
Vcc
V1 CS
CG CS
MK CS
PC CS
E²PROM
VI SP
COSMO CS
PC SP
IC008
NON-VOLATILE MEMORY
V CC
CS
SK
DI
DO
EE CS
EE SCK
DATA TO EE
DATA TO MODE
MECHA CS
Q011
COSMO CS
DATA TO SLAVE
DATA TO MASTER
SCK
IC001 (1/2)
MECHANISM CONTROL
SS5V
UNREG
(CN003 (1))
BATT SENS
X001 16MHz
16MHz OUT
16MHz IN
DATA TO SLVE
DATA TO MSTR
SCK
SYSTEM RESET
SYSTEM SYNC
POWER SAVE
FERS
FERA
CAP ON 2
AF REC
PCM ACT
MECHANISM CONTROL SERVO
LOAD
UNLOAD
DEW SENS
THERMISTOR
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
END SENS
CC DOWN
T/E LED
Q001 LED DRIVE
TOP SENS
T REEL FG
REEL LED
REC PROOF
WP HG
ME/MP
IN/OUT
Q023
HI8 DET (E DET)
H CNG
HI8/NOR
SP/LP
FE ON
Q001(1/2)
Q010(1/2)
CLOG
SP/EP DET
JOG
S IN
VA PB MODE
EDIT
SYNC DET
COMP SYNC
VI SWP
RF PB MODE
SYSTEM RESET
HIFI/NTNO
JC MONO/STE DET
MONO/ST DET
JOG VD
DS ON
RF SWP
CG CS
DS
JOG
SYN
JOG
PS101
Q004,005
5V REG
M UNREG (CN003 (4))
IC003 (1/2)
VOLTAGE ERROR AMP

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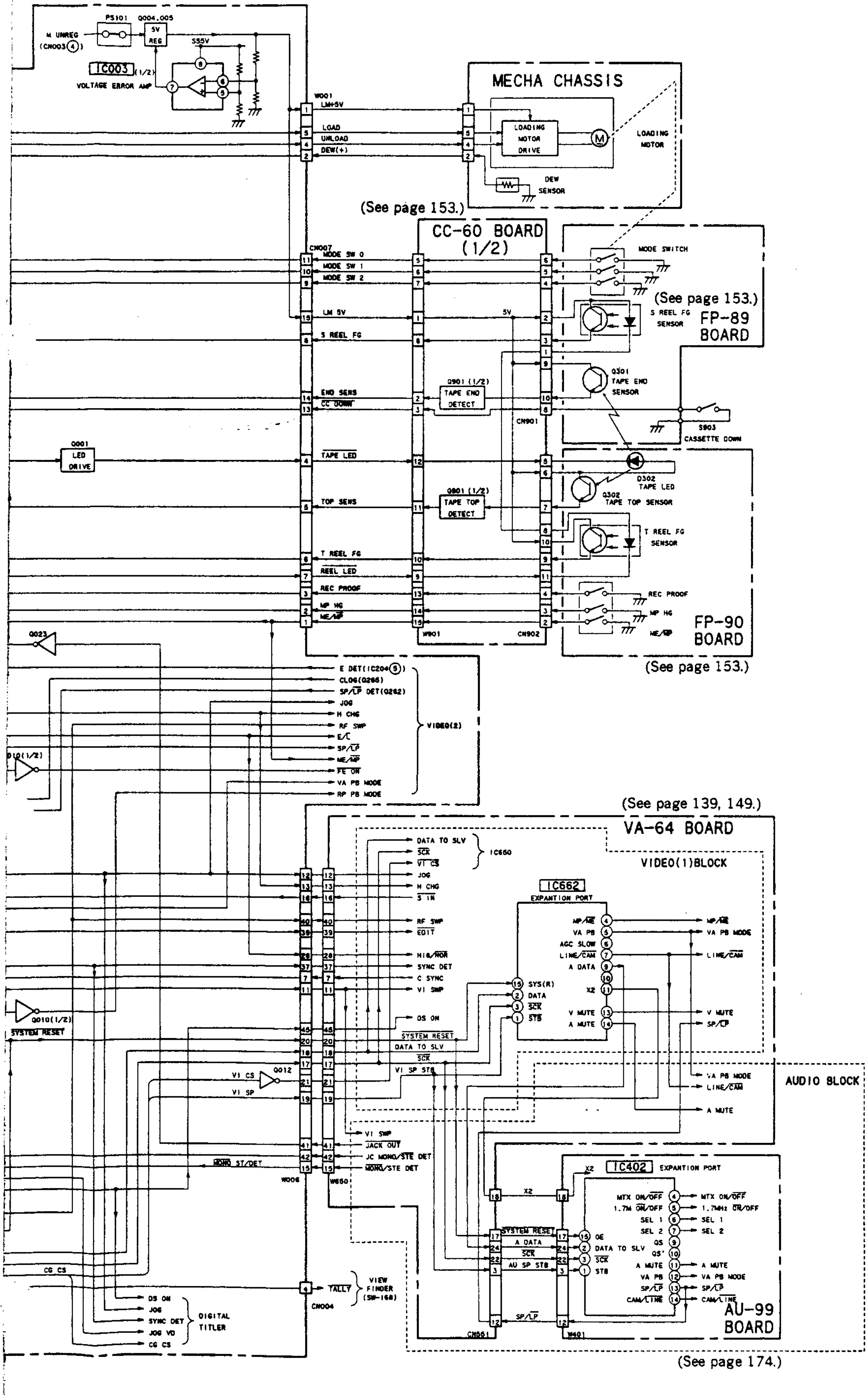
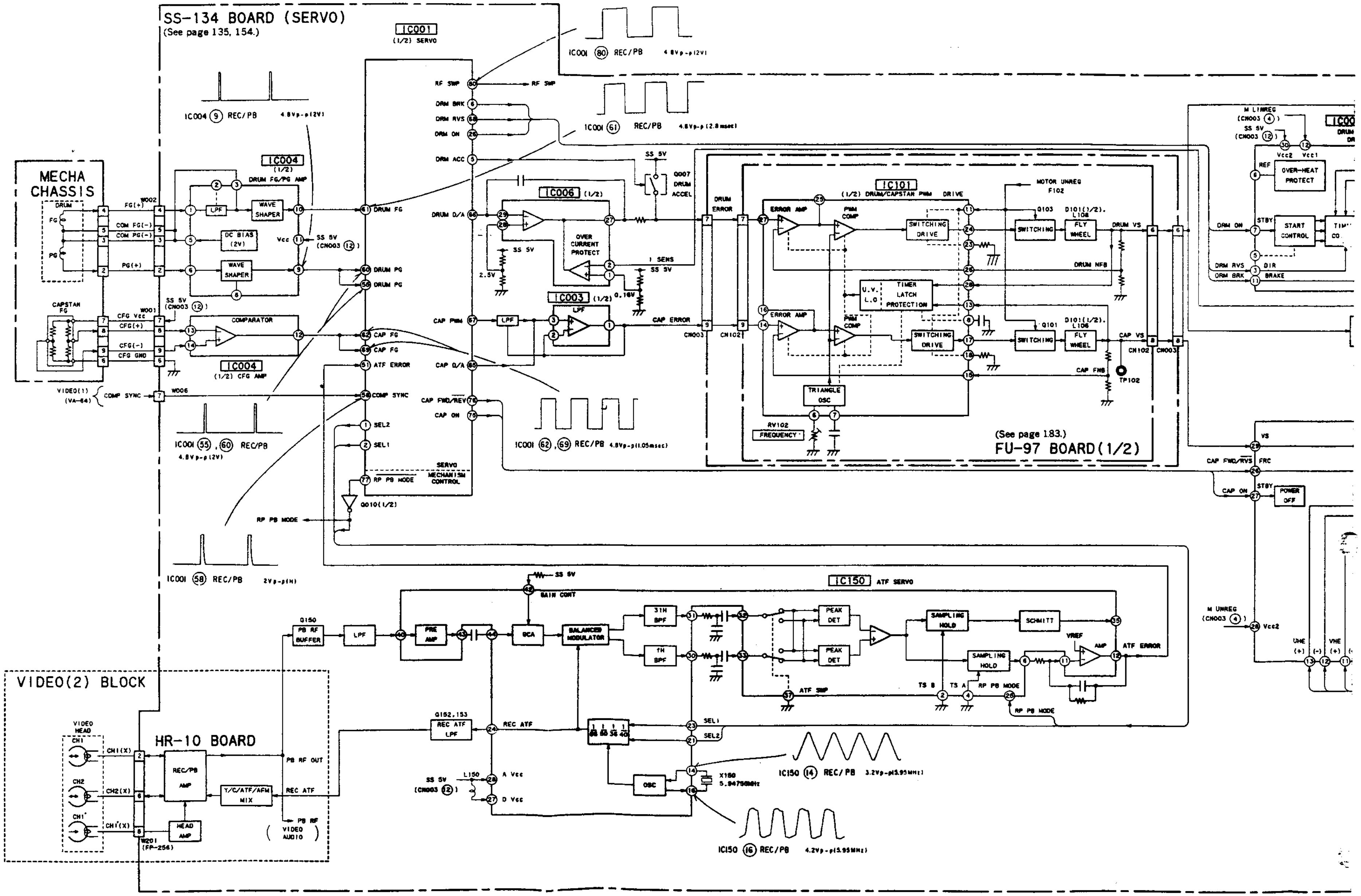
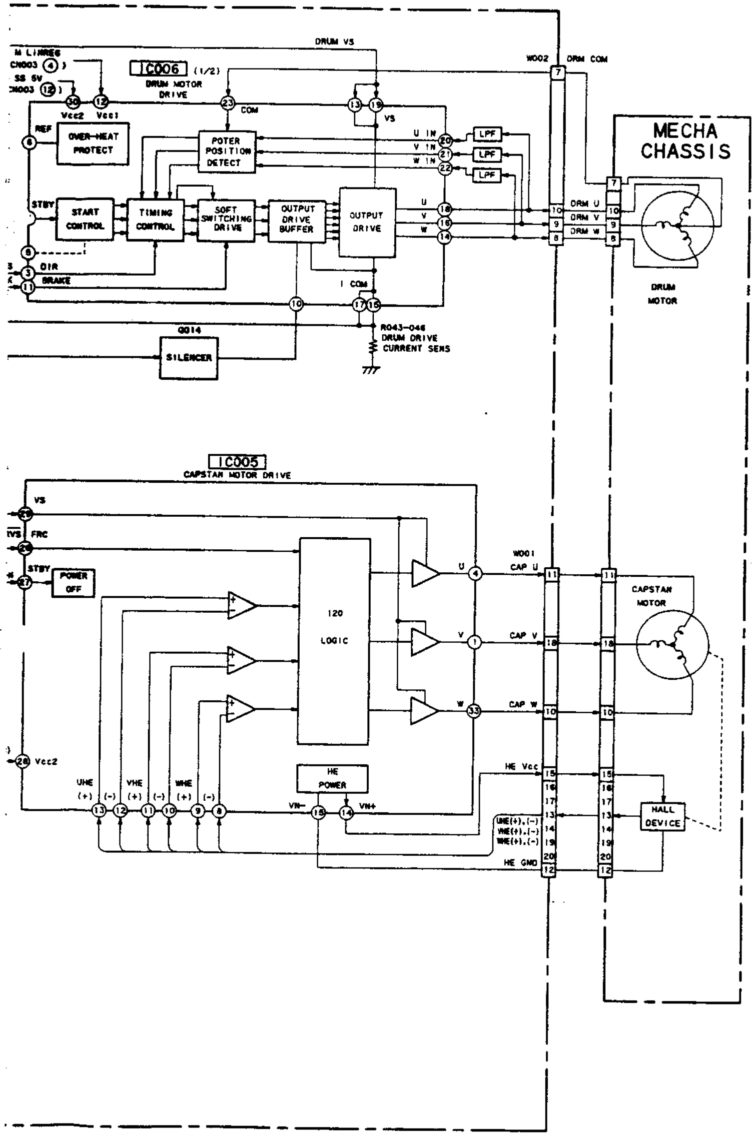

PS101
Q004,005
5V REG
M UNREG (CN003④)
S5SV
IC003 (1/2)
VOLTAGE ERROR AMP
W001
LMH5V
LOAD
UNLOAD
DEW(+)
MECHA CHASSIS
LOADING MOTOR DRIVE
LOADING MOTOR
DEW SENSOR
(See page 153.)
CC-60 BOARD (1/2)
CN007
MODE SW 0
MODE SW 1
MODE SW 2
LM 5V
S REEL FG
END SENS
CC DOWN
Q001 LED DRIVE
TAPE LED
TOP SENS
T REEL FG
REEL LED
REC PROOF
MP HG
ME/MP
Q901 (1/2) TAPE END DETECT
Q901 (1/2) TAPE TOP DETECT
5V
CN901
W901
CN902
MODE SWITCH
(See page 153.)
S REEL FG SENSOR
FP-89 BOARD
Q301 TAPE END SENSOR
S903 CASSETTE DOWN
D302 TAPE LED
Q302 TAPE TOP SENSOR
T REEL FG SENSOR
REC PROOF
MP HG
ME/MP
FP-90 BOARD
(See page 153.)
Q023
Q010(1/2)
E DET(IC204⑤)
CLOG(Q266)
SP/LP DET(Q262)
JOG
H CHG
RF SWP
E/C
SP/LP
ME/MP
FE ON
VA PB MODE
RP PB MODE
VIDEO(2)
(See page 139, 149.)
VA-64 BOARD
VIDEO(1)BLOCK
DATA TO SLV
SCK
VI CS
IC650
JOG
H CHG
S IN
RF SWP
EDIT
HI8/NOR
SYNC DET
C SYNC
VI SWP
DS ON
SYSTEM RESET
DATA TO SLV
SCK
VI SP STB
IC662 EXPANTION PORT
MP/ME
VA PB
AGC SLOW
LINE/CAM
A DATA
X2
V MUTE
A MUTE
SYS(R)
DATA
SCK
STB
MP/ME
VA PB MODE
LINE/CAM
V MUTE
SP/LP
AUDIO BLOCK
VA PB MODE
LINE/CAM
A MUTE
Q010(1/2)
SYSTEM RESET
VI CS
Q012
VI SP
VI SWP
JACK OUT
JC MONO/STE DET
MONO/STE DET
MONO ST/DET
W006
W650
X2
IC402 EXPANTION PORT
MTX ON/OFF
1.7M ON/OFF
SEL 1
SEL 2
QS
QS'
A MUTE
VA PB
SP/LP
CAM/LINE
OE
DATA TO SLV
SCK
STB
MTX ON/OFF
1.7MHz ON/OFF
SEL 1
SEL 2
A MUTE
VA PB MODE
SP/LP
CAM/LINE
SYSTEM RESET
A DATA
SCK
AU SP STB
SP/LP
CN651
W401
AU-99 BOARD
CG CS
TALLY
VIEW FINDER (SW-168)
CN004
DS ON
JOG
SYNC DET
JOG VD
CG CS
DIGITAL TITLER
(See page 174.)

3-10. SERVO BLOCK DIAGRAM


SS-134 BOARD (SERVO)
(See page 135, 154.)
IC001 (1/2) SERVO
IC001 ⑧⓪ REC/PB 4.8Vp-p(2V)
IC001 ⑥① REC/PB 4.8Vp-p(2.8msec)
IC004 ⑨ REC/PB 4.8Vp-p(2V)
IC004 (1/2) DRUM FG/PG AMP
IC004 (1/2) CFG AMP
MECHA CHASSIS
DRUM
CAPSTAN FG
FG
PG
WAVE SHAPER
DC BIAS (2V)
LPF
COMPARATOR
RF SWP
DRM BRK
DRM RVS
DRM ON
DRM ACC
DRUM D/A
DRUM FG
DRUM PG
CAP FG
ATF ERROR
COMP SYNC
SEL2
SEL1
RP PB MODE
SERVO MECHANISM CONTROL
Q010(1/2)
CAP PWM
CAP D/A
CAP FWD/REV
CAP ON
IC006 (1/2)
OVER CURRENT PROTECT
IC003 (1/2)
CAP ERROR
DRUM ERROR
Q007 DRUM ACCEL
I SENS
IC001 ⑤⑤, ⑥⓪ REC/PB 4.8Vp-p(2V)
IC001 ⑥②, ⑥⑨ REC/PB 4.8Vp-p(1.05msec)
IC001 ⑤⑧ REC/PB 2Vp-p(H)
VIDEO(1) (VA-64)
IC101 (1/2) DRUM/CAPSTAN PWM DRIVE
ERROR AMP
PWM COMP
SWITCHING DRIVE
TIMER LATCH PROTECTION
U.V. L.O
TRIANGLE OSC
RV102 FREQUENCY
MOTOR UNREG F102
Q103
Q101
SWITCHING
FLY WHEEL
D101(1/2), L106
DRUM VS
DRUM NFB
CAP VS
CAP FNB
TP102
CN102
CN003
(See page 183.)
FU-97 BOARD(1/2)
M UNREG
OVER-HEAT PROTECT
START CONTROL
DIR
BRAKE
STBY
POWER OFF
VS
CAP FWD/RVS
IC150 ATF SERVO
GAIN CONT
Q150 PB RF BUFFER
PRE AMP
GCA
BALANCED MODULATOR
31H BPF
1H BPF
PEAK DET
SAMPLING HOLD
SCHMITT
VREF
AMP
ATF SWP
TS B
TS A
Q152,153 REC ATF LPF
REC ATF
A Vcc
D Vcc
L150
OSC
X150 5.9475MHz
IC150 ⑭ REC/PB 3.2Vp-p(5.95MHz)
IC150 ⑯ REC/PB 4.2Vp-p(5.95MHz)
VIDEO(2) BLOCK
HR-10 BOARD
VIDEO HEAD
CH1
CH2
CH1'
REC/PB AMP
HEAD AMP
Y/C/ATF/AFM MIX
PB RF OUT
REC ATF
PB RF
VIDEO AUDIO
W201 (FP-256)


IC006 (1/2)
DRUM MOTOR DRIVE
DRUM VS
COM
VS
OVER-HEAT PROTECT
POTER POSITION DETECT
START CONTROL
TIMING CONTROL
SOFT SWITCHING DRIVE
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
U IN
V IN
W IN
LPF
LPF
LPF
WO02
DRM COM
DRM U
DRM V
DRM W
MECHA CHASSIS
DRUM MOTOR
STBY
REF
DIR
BRAKE
Vcc2
Vcc1
I COM
Q014
SILENCER
R043-046
DRUM DRIVE
CURRENT SENS
IC005
CAPSTAN MOTOR DRIVE
VS
FRC
STBY
POWER OFF
120 LOGIC
HE POWER
Vcc2
UHE
VHE
WHE
VH-
VH+
WO01
CAP U
CAP V
CAP W
HE Vcc
HE GND
CAPSTAN MOTOR
HALL DEVICE

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3-11. SERVO, SYSTEM CONTROL SYSTEM TERMINAL FUNCTION SS-134 BOARD IC001 (CXP-80116)

PIN No.	Signal Name	I/O	Function	Connection
1	SEL2	O	ATF REF PILOT signal frequency control ATF REF PILOT f₁ f₂ f₃ f₄ SEL 1 H L H L SEL 2 H H L L	ATF IC CXA1204Q
2	SEL1	O		
3	DS ON	O	Data Screen ON/OFF control. Data Screen On and Data Screen key are selected with "H"	VIDEO block
4	VI SWP	O	RF SWP using for Vidoe system Normally, same as RF SWP. When using 'CH only "H" 3Head is used.	VIDEO block
5	DRM ACC	O	DRUM motor acceleration signal Acceleration is selected with "H"	To Drum motor driver CXA8006M
6	DRM BLK	O	DRUM motor brake signal Brake is selected with "H"	To Drum motor driver CXA8006M
7	JOG	O	Normal/JOG mode recognition signal JOG is selected with "H"	R/P Amp VIDEO block
8	FE RA	—	Not used	——
9	FE RS	—		
10	H CHG	O	2CH or 'CH select signal 'CH is selected with "H" Only 3Head is used	VIDEO system R/P Amp
11	SYSTEM SYNC	O	Internal bus communication synchronizing signal (V synchronization)	Mode controller
12	SP/$\overline{\text{LP}}$	O	SP/LP mode recognition signal SP mode is selected with "H"	R/P Amp VIDEO/AUDIO block
13	$\overline{\text{NOR}}$/Hi8	O	Hi8/NOR mode output	VIDEO block
14	VA PB MODE	O	VIDEO/AUDIO system REC/PB mode select PB mode is selected with "H"	VIDEO/AUDIO block
15	UNLOAD	O	Loading motor control signal OFF LOADING UNLOADING BRAKE LOAD L H L H UNLOAD L L H H	TO loading motor
16	LOAD	O		
17	CAP ON2	—	Not used	——
18	AF REC	—	Not used	——
19	ME/$\overline{\text{MP}}$	I	ME/MP tape recognition input ME tape is selected with "H"	To CC board
20	MP HG	I	MP HG tape recognition input MPHG is selected with "L"	To CC board
21	REC PROOF	I	REC PROOF recognition input REC PROOF is selected with "L"	To CC board
22	MODE SW2	I	Mechanical position input	To CC board
23	MODE SW1	I		
24	MODE SW0	I		
25	$\overline{\text{CC DOWN}}$	I	Cassette IN switch input Cassette IN is selected with "L"	To CC board
26	DRM ON	O	Drum motor drive control Motor Drive is selected with "H"	To Drum motor driver CXA8006M
27	T/E LED	O	LED for tape top end sensor drive control LED Flashing is selected with "H"	To CC board
28	$\overline{\text{REEL LED}}$	O	LED for reel sensor drive control LED Flashing is selected with "L"	To CC board

PIN No.	Signal Name	I/O	Function	Connection
29	POWER SAVE	O	Marker block POWER SAVE control signal	——
30	$\overline{\text{EDIT}}$	O	EDIT ON/OFF control EDIT is selected with "L"and interlocked with EDIT key.	To VIDEO block
31	SS GND	—	—	——
32	$\overline{\text{SYSTEM RESET}}$	I	Control by mode controller with RESET terminal of this microcomputer RESET is selected "L"	Mode controller and others
33	SS GND	—	—	——
34	16M OUT	O	Crystal connecting terminal for system clock oscillation (16 MHz)	X'tal (X001)
35	16M IN	I		
36	$\overline{\text{COSMO CS}}$	I	Select signal of this microcomputer from internal bus communication mode controller Selected with "L"	Mode controller
37	DATA TO SLVE	I	Serial data input terminal	Mode controller
38	DATA TO MSTR	O	Serial data output terminal	Mode controller
39	$\overline{\text{SCK}}$	I	Serial clock input terminal	Mode controller
40	PCM ACT	—	Not used	——
41	Hi8 DET	I	Hi8 with Hi8/NOR distinction input "H" when playing back	IC204 (CXA2017)
42	S IN	I	Distinction input of the S terminal connection	VIDEO block
43	$\overline{\text{MONO}}$/ST DET	I	AFM monaural/stereo recognition input Stereo is selected "H" (Only stereo correspondence model)	To AUDIO block
44	TOP SENS	I	Tape top end sensor input TOP is selected with "H"	To CC board
45	END SENS	I	END is selected with "H"	
46	T REEL FG	I	Reel sensor input Take up side	To CC board
47	S REEL FG	I	Reel sensor input Supply side	
48	BATT SENS	I	Battery input voltage sense	——
49	DEW SENS	I	DEW SENSOR input	DEW SENSOR, To CC board
50	THERMISTOR	I	THERMISTOR input (This model: fixed value)	
51	ATF ERROR	I	ATF error (ATF LOCK error) input, A/D input terminal	IC105 (CXA1204Q)⑫
52	SS GND	—	—	——
53 54	SS 4.9V		Power source supply terminal	
55	DRM PG	I	DRUM PG input, FRC (high precision timer) capture input terminal	IC502 ⑨
56	$\overline{\text{HiFi}}$/WIND	I	Not used	——
57	CLOG	I	Clog detection signal input. CLOG is selected with "H"	Q265 ©
58	COMP SYNC	I	Composite trunk (composite synchronizing signal) input. (built-in V SYNC separator)	To V IDEO block
59	SP/$\overline{\text{LP}}$ DET	I	SP/LP recognition signal input	Q262 ©
60	DRM PG	—	—	——
61	DRM FG	I	DRUM FG input terminal, FRC capture input terminal	IC004 ⑩ Sense Amplifier

PIN No.	Signal Name	I/O	Function	Connection
62	CAP FG	I	CAPSTAN FG input terminal, FRC capture input terminal	IC502⑫ Sense amplifier
63	MONO/$\overline{\text{ST}}$	O	Input-output selecting switch control signal	VIDEO block
64	SYNC DET	I	With/Without VIDEO signal recognition signal input	To VIDEO block
65	CAP D/A	O	DA gate pulse output terminal for CAP ERROR output, Servo exclusive output terminal (DA mode)	To capstan lowpass filter
66	DRM D/A	O	DA gate pulse output terminal for DRUM ERROR output, Servo exclusive output terminal (DA mode)	To drum lowpass filter
67	CAP PWM	O	PWM output terminal for CAP ERROR output, Servo excluseive output terminal (PWM mode)	Capstan driver IC503
68	DRM RVS	O	DRUM rotating direction control signal RVS is selected with "H" FWD is selected with "L"	IC006 ③
69	CAP FG	I	External event input terminal to CAP FG input terminal exclusive counter for TAPE COUNTER drive	IC004⑫ sense amplifier
70	MIC JACK MONO/$\overline{\text{ST}}$	I	External MIC Monaural/stereo recognition signal. Monaural is selected with "H"	To AUDIO block
71 72	SS 4.9V			
73	SS GND	—	—	—
74	—	—	Not used	—
75	CAP ON	O	Capstan driver ON control signal	IC005⑬ Capstan driver
76	CAP FWD/$\overline{\text{REV}}$	O	Capstan rotaing direction control signal, FWD is selected with "H", RVS is selected with "L"	IC005⑳ Capstan driver
77	$\overline{\text{RP PB MODE}}$	O	REC/PB mode select signal of RP amplifier and ATF IC	Q010 Ⓑ
78	FE ON	O	Flying erase oscillation ON/OFF signal. Oscillation is selected with "H"	To RP AMP.
79	JOG VD	O	Artificial VD output terminal input to VIDEO signal in varying speed playback	To VIDEO block
80	RF SWP	O	RF SWP output temrinal	RP block VIDEO/AUDIO block

Decoder port for the chip cell allocation list (TC4028)

No.	Port name	Port allocation name
3	Q0	E²-ROM CS
14	Q1	
2	Q2	VA S/P STB
15	Q3	Φ II SR CS
1	Q4	COSMO CS
6	Q5	—
7	Q6	CG STB
4	Q7	PCM CS
9	Q8	PCM S/P STB
5	Q9	—

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3-12. MODE CONTROL SYSTEM TERMINAL FUNCTION FD-44 BOARD IC201 (μPD75316)

Pin No.	Port name	Port allocation name	I/O	The another connection	Function•Remarks
1	S12		O	LCD	Segment signal output terminal of the liquid crystal display element (LCD)
2	S13		O	LCD	
3	S14		O	LCD	
4	S15		O	LCD	
5	S16		O	LCD	
6	S17		O	LCD	
7	S18		O	LCD	
8	S19		O	LCD	
9	S20		O	LCD	
10	S21		O	LCD	
11	S22		O	LCD	
12	S23		O	LCD	
13	S24/BP0		O	LCD	
14	S25/BP1		O	LCD	
15	S26/BP2		O	LCD	
16	S27/BP3		O	LCD	
17	S28/BP4	TITL CS	O	FD	Chip selector signal of the standard cell for titler (IC301)
18	S29/BP5	~REMO CS	O	FD	Chip selector signal of the wireless remote control reception microcomputer (IC203)
19	S30/BP6	S RAM CS	O	FD	Chip selector signal of RAM for the titler (IC302)
20	S31/BP7	~CAM CS	O	CAM	Chip selector signal of the camera microcomputer (IC501)
21	COM0			LCD	Remote control signal output terminal of the liquid crystal display element (LCD)
22	COM1			LCD	
23	COM2			LCD	
24	COM3			LCD	
25	BIAS			LCD	Output terminal for dividing resistance cut of the liquid crystal display element (LCD)
26	VLC0			LCD	Power source supply terminal of the liquid crystal display enement (LCD)
27	VLC1			LCD	
28	VLC2			LCD	
29	P40	~VTR POWER	O	FU	Turning ON/OFF signal of the VTR system DC/DC converter
30	P41	~CAM POWER	O	CAM	Turning ON/OFF signal of the CAM system DC/DC converter
31	P42	~SYSTEM RESET	O	ALL	Initializing (reset) signal of each microcomputer or IC
32	P43	~TALLY	O	VF	Tally LED flashing signal
33	VSS				Ground power source
34	P50	K OUT 0	O	FD	Output signal of the key matrix
35	P51	K OUT 1	O	FD	
36	P52	K OUT 2	O	FD	
37	P53	K OUT 3	O	FD	
38	P00/INT4	~BATT IN	I	FD	Signal for the battery or the AC adapter attaching/removing detection

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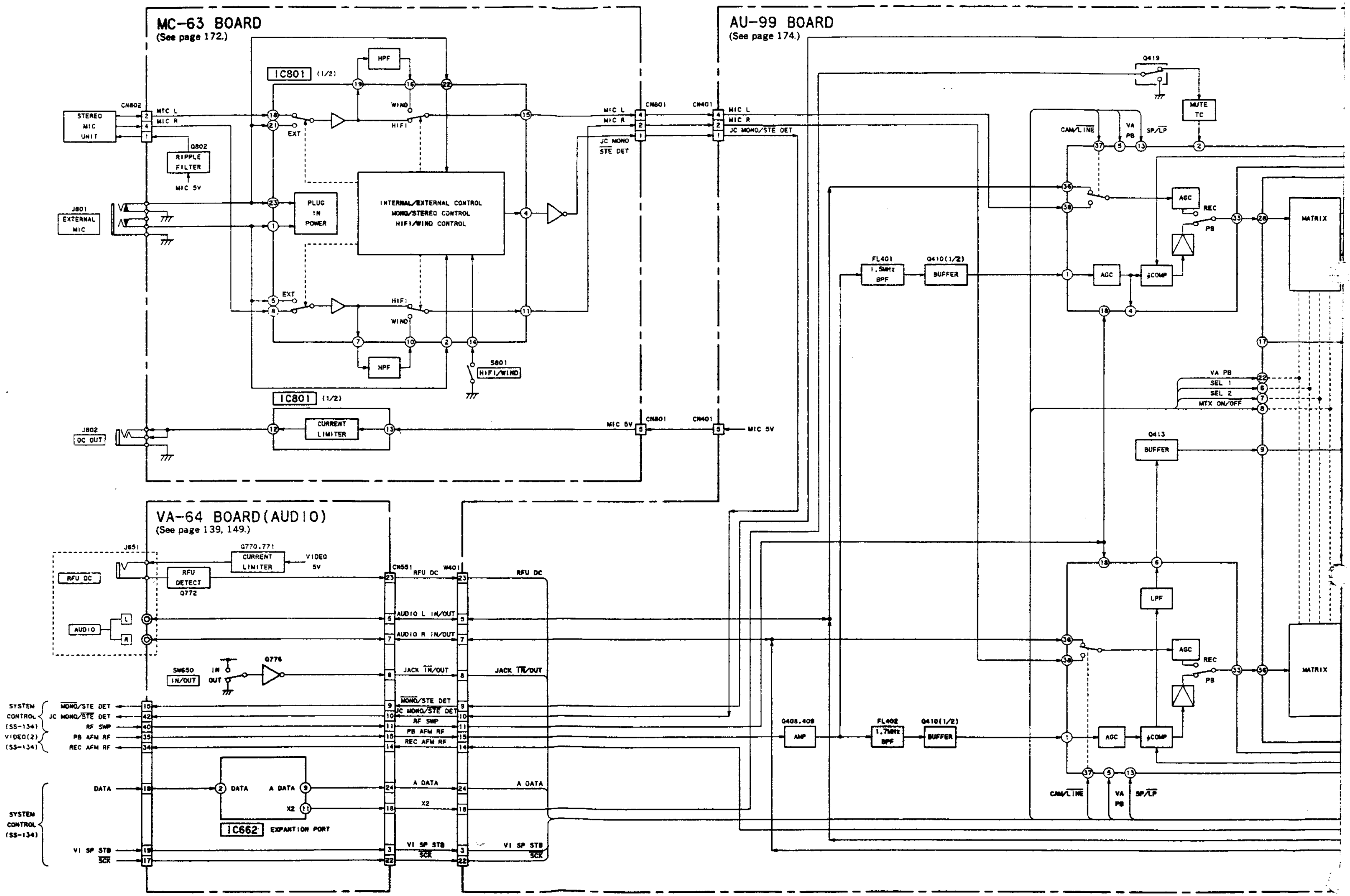
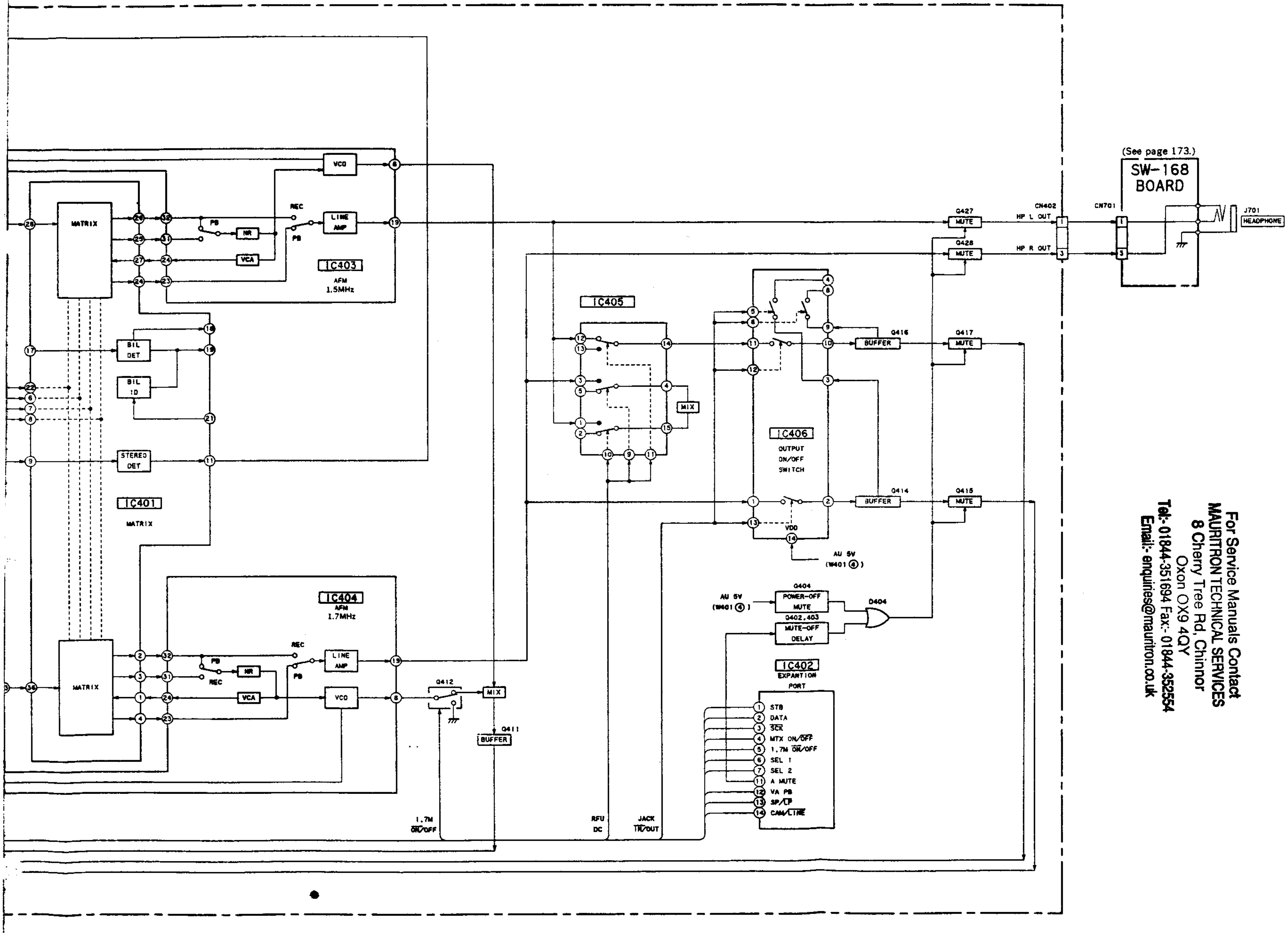
Pin No.	Port name	Port allocation name	I/O	The another connection	Function•Remarks
39	P01/~SCK	~SCK	O/I	ALL	Serial clock for serial communication (This is input only when communicating with camera microcomputer)
40	P02/S0/SB0	DATA TO SLVE	O	ALL	Data output signal for serial communication
41	P03/SI/SB1	DATA TO MSTR	I	ALL	Data input signal for serial communication
42	P10/INT0	SYSTEM SYNC	I	SS	Timing signal for serial communication
43	P11/INT1	~LI PRE END	I	FD	Pre-end detection signal of the lithium battery (Set value is 2.8V or less)
44	P12/INT2	~LINCS PWR ON	I	FD	POWER ON requiring signal of the LANC communication (Power is turned on with L at 140ms or more)
45	P13/TI0	DATA TO MODE	I	SS	Serial communication data input signal of EE-PROM
46	P20/PT00	K OUT4/DATA TO E^2	O	SS	Data output signal of the output signal +EE-PROM of the key matrix
47	P21	K OUT5/~SCK E^2	O	SS	Serial clock signal of the output signal +EE-PROM of the key matrix
48	P22/PCL	K OUT 6	O	FD	Output signal of the key matrix
49	P23/BUZ				
50	P30/LCDCL	SELECT 1	O	SS	Signal for producing chip select
51	P31/SYNC	SELECT 2	O	SS	
52	P32	SELECT 3	O	SS	
53	P33	~VTR SW	I	FD	Forced VTR mode signal (Uned at the place for business)
54	VDD				Positive voltage supplying terminal
55	XT1				Crystal vibrator connecting terminal for clock
56	XT2				
57	NC				
58	X1				Ceramic connecting terminal for the main system clock oscillation
59	X2				
60	P60/KR0	K IN 0	I	FD	Key matrix input signal
61	P61/KR1	K IN 1	I	FD	
62	P62/KR2	K IN 2	I	FD	
63	P63/KR3	K IN 3	I	FD	
64	P70/KR4	K IN 4	I	FD	
65	P71/KR5	K IN 5	I	FD	
66	P72/KR6	K IN 6	I	FD	
67	P73/KR7	K IN 7	I	FD	
68	~RESET	~RESET	I	FD	Reset signal input terminal
69	S0		O	FD	Output 1/64 of the oscillation for clock (32.768kHz/64≒512Hz)
70	S1		O	LCD	
71	S2		O	LCD	
72	S3		O	LCD	
73	S4		O	LCD	
74	S5		O	LCD	
75	S6		O	LCD	
76	S7		O	LCD	
77	S8		O	LCD	
78	S9		O	LCD	
79	S10		O	LCD	
80	S11		O	LCD	

3-13. AUDIO BLOCK DIAGRAM


MC-63 BOARD
(See page 172.)
IC801 (1/2)
HPF
STEREO MIC UNIT
CN802
MIC L
MIC R
Q802
RIPPLE FILTER
MIC 5V
J801
EXTERNAL MIC
EXT
WIND
HIFI
PLUG IN POWER
INTERNAL/EXTERNAL CONTROL
MONO/STEREO CONTROL
HIFI/WIND CONTROL
S801
HIFI/WIND
CN801
JC MONO
STE DET
J802
DC OUT
CURRENT LIMITER
MIC 5V
AU-99 BOARD
(See page 174.)
CN401
JC MONO/STE DET
Q419
MUTE TC
CAM/LINE
VA PB
SP/LP
AGC
REC
PB
MATRIX
FL401
1.5MHz BPF
Q410(1/2)
BUFFER
ϕCOMP
VA PB
SEL 1
SEL 2
MTX ON/OFF
Q413
BUFFER
LPF
VA-64 BOARD(AUDIO)
(See page 139, 149.)
J651
RFU DC
Q770,771
CURRENT LIMITER
VIDEO 5V
RFU DETECT
Q772
AUDIO
L
R
CN651
W401
RFU DC
AUDIO L IN/OUT
AUDIO R IN/OUT
SW650
IN/OUT
IN
OUT
Q776
JACK IN/OUT
SYSTEM CONTROL (SS-134)
VIDEO(2) (SS-134)
MONO/STE DET
JC MONO/STE DET
RF SWP
PB AFM RF
REC AFM RF
DATA
A DATA
X2
IC662
EXPANTION PORT
SYSTEM CONTROL (SS-134)
VI SP STB
SCK
Q408,409
AMP
FL402
1.7MHz BPF
Q410(1/2)
BUFFER


MATRIX
VCO
LINE AMP
NR
VCA
REC
PB
IC403
AFM 1.5MHz
BIL DET
BIL ID
STEREO DET
IC401
MATRIX
IC404
AFM 1.7MHz
Q412
MIX
Q411
BUFFER
IC405
IC406
OUTPUT ON/OFF SWITCH
VDD
AU 5V (W401 ④)
Q404
POWER-OFF MUTE
Q402,403
MUTE-OFF DELAY
D404
IC402
EXPANTION PORT
① STB
② DATA
③ SCK
④ MTX ON/OFF
⑤ 1,7M ON/OFF
⑥ SEL 1
⑦ SEL 2
⑪ A MUTE
⑫ VA PB
⑬ SP/LP
⑭ CAM/LINE
Q416
BUFFER
Q417
MUTE
Q414
BUFFER
Q415
MUTE
Q427
MUTE
Q428
MUTE
CN402
HP L OUT
HP R OUT
CN701
(See page 173.)
SW-168 BOARD
J701
HEADPHONE
1.7M ON/OFF
RFU DC
JACK IN/OUT

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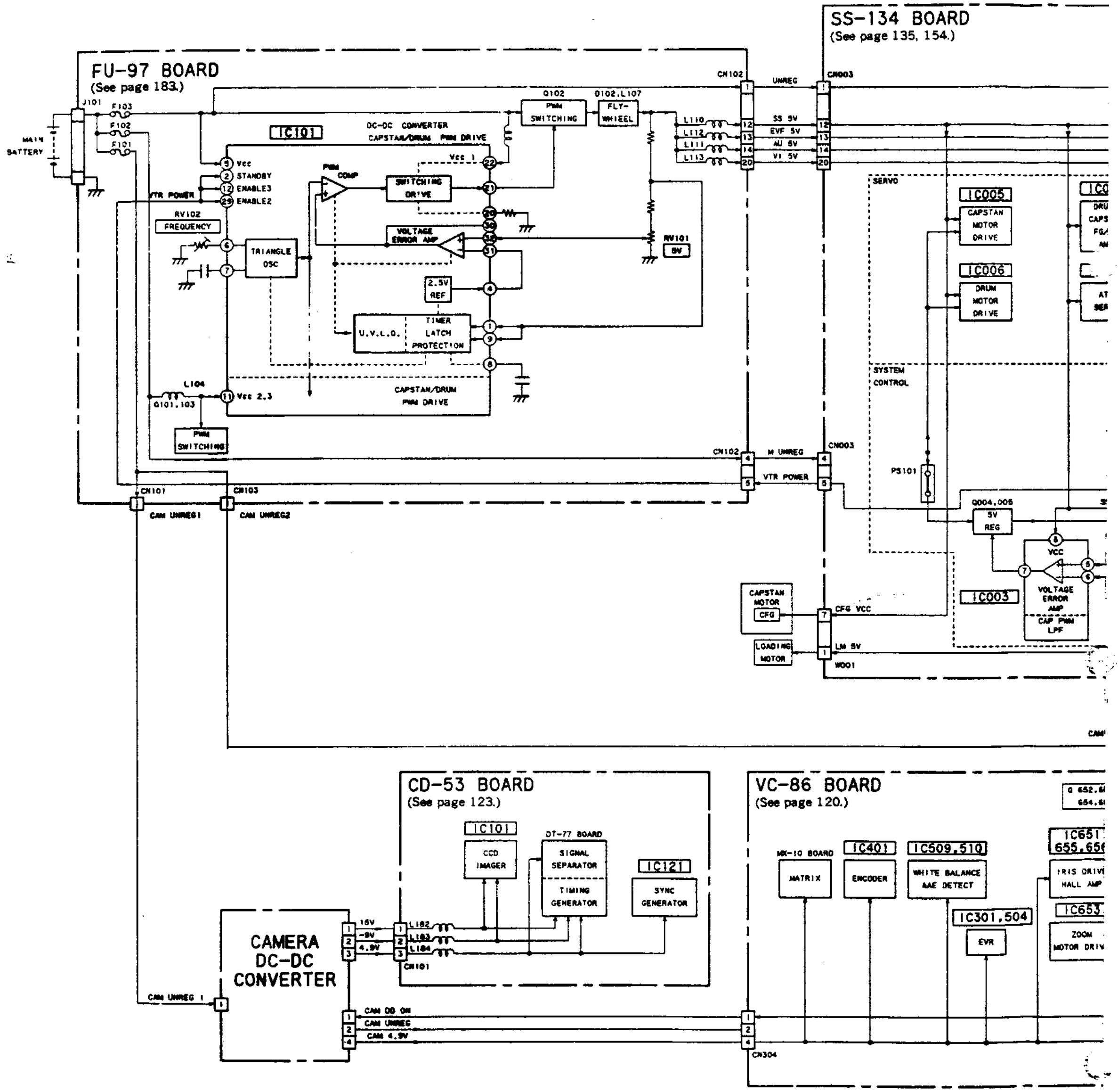
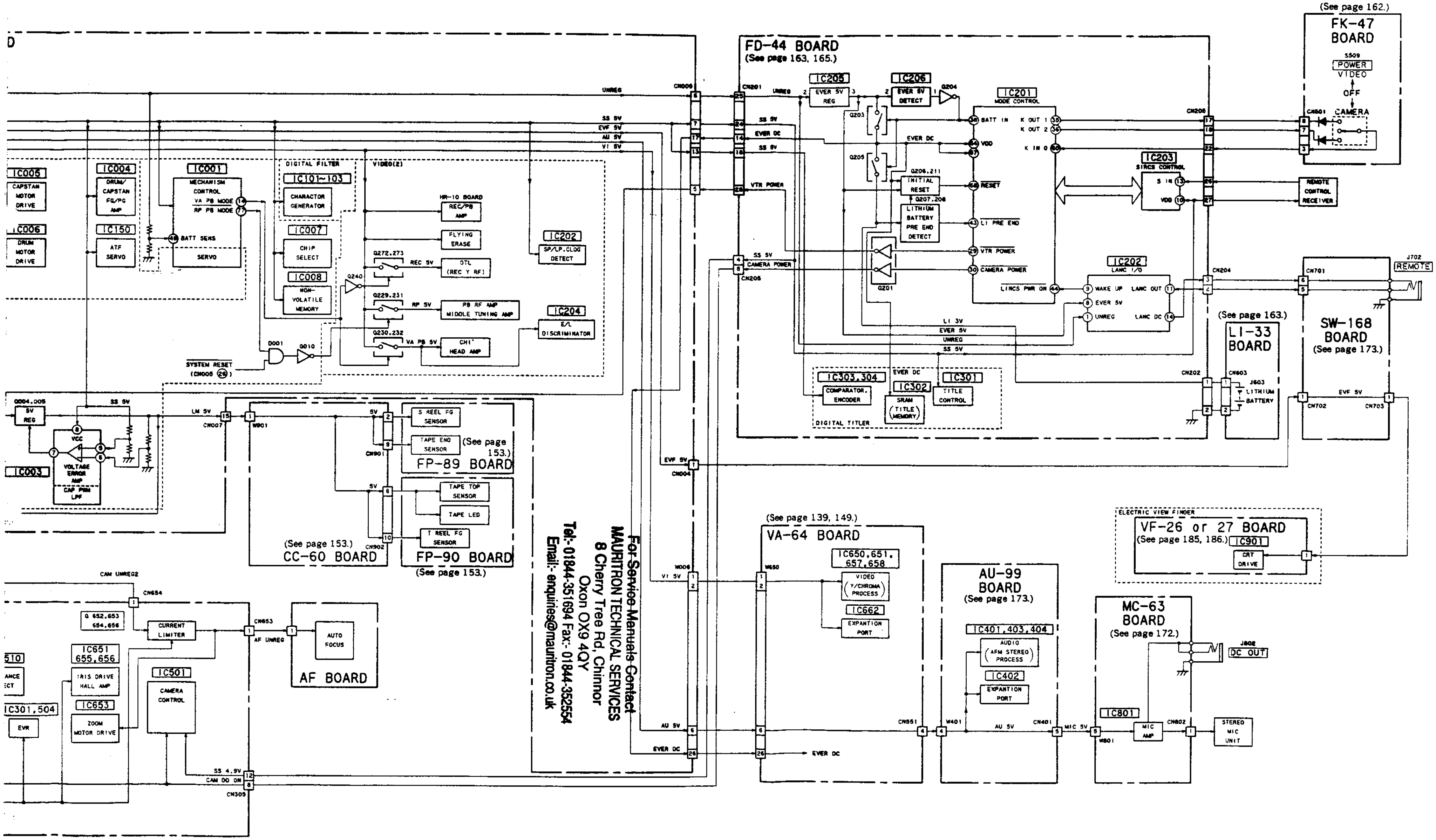
3-14. POWER BLOCK DIAGRAM


FU-97 BOARD
(See page 183.)
MAIN BATTERY
J101
F103
F102
F101
IC101
DC-DC CONVERTER
CAPSTAN/DRUM PWM DRIVE
Vcc
STANDBY
ENABLE3
ENABLE2
VTR POWER
RV102
FREQUENCY
TRIANGLE OSC
PWM COMP
SWITCHING DRIVE
Vcc 1
VOLTAGE ERROR AMP
2.5V REF
U.V.L.O.
TIMER LATCH PROTECTION
L104
Q101,103
Vcc 2.3
CAPSTAN/DRUM PWM DRIVE
PWM SWITCHING
Q102
PWM SWITCHING
Q102,L107
FLY-WHEEL
RV101
8V
L110
L112
L111
L113
CN102
CN101
CN103
CAM UNREG1
CAM UNREG2
UNREG
SS 5V
EVF 5V
AU 5V
VI 5V
M UNREG
VTR POWER
SS-134 BOARD
(See page 135, 154.)
CN003
SERVO
IC005
CAPSTAN MOTOR DRIVE
IC006
DRUM MOTOR DRIVE
SYSTEM CONTROL
PS101
Q004,005
5V REG
VCC
VOLTAGE ERROR AMP
CAP PWM LPF
IC003
CAPSTAN MOTOR
CFG
CFG VCC
LOADING MOTOR
LM 5V
W001
CD-53 BOARD
(See page 123.)
IC101
CCD IMAGER
DT-77 BOARD
SIGNAL SEPARATOR
TIMING GENERATOR
IC121
SYNC GENERATOR
L182
L183
L184
CN101
15V
-9V
4.9V
CAMERA DC-DC CONVERTER
CAM UNREG 1
CAM DD ON
CAM UNREG
CAM 4.9V
VC-86 BOARD
(See page 120.)
MX-10 BOARD
MATRIX
IC401
ENCODER
IC509,510
WHITE BALANCE AAE DETECT
IC301,504
EVR
IRIS DRIVE HALL AMP
IC653
ZOOM MOTOR DRIVE
CN304



FD-44 BOARD
(See page 163, 165.)
IC205 EVER 5V REG
IC206 EVER 5V DETECT
Q204
IC201 MODE CONTROL
BATT IN
K OUT 1
K OUT 2
K IN 0
VDD
RESET
LI PRE END
VTR POWER
CAMERA POWER
LINCS PWR ON
Q203
Q205
Q206,211 INITIAL RESET
Q207,208 LITHIUM BATTERY PRE END DETECT
Q201
IC203 SIRCS CONTROL
IC202 LANC I/O
WAKE UP
EVER 5V
UNREG
LANC OUT
LANC DC
IC303,304 COMPARATOR, ENCODER
IC302 SRAM (TITLE MEMORY)
IC301 TITLE CONTROL
DIGITAL TITLER
(See page 162.)
FK-47 BOARD
S509 POWER
VIDEO
OFF
CAMERA
REMOTE CONTROL RECEIVER
(See page 163.)
LI-33 BOARD
J603 LITHIUM BATTERY
SW-168 BOARD
(See page 173.)
J702 REMOTE
EVF 5V
ELECTRIC VIEW FINDER
VF-26 or 27 BOARD
(See page 185, 186.)
IC901 CRT DRIVE
(See page 139, 149.)
VA-64 BOARD
IC650,651, 657,658 VIDEO (Y/CHROMA PROCESS)
IC662 EXPANTION PORT
AU-99 BOARD
(See page 173.)
IC401,403,404 AUDIO (AFM STEREO PROCESS)
IC402 EXPANTION PORT
MC-63 BOARD
(See page 172.)
IC801 MIC AMP
STEREO MIC UNIT
J802 DC OUT
AU 5V
MIC 5V
EVER DC
UNREG
SS 5V
EVF 5V
AU 5V
VI 5V
VTR POWER
CAMERA POWER
LI 3V
IC005 CAPSTAN MOTOR DRIVE
IC006 DRUM MOTOR DRIVE
IC004 DRUM/CAPSTAN FG/PG AMP
IC150 ATF SERVO
IC001 MECHANISM CONTROL
VA PB MODE
RF PB MODE
BATT SENS
SERVO
DIGITAL FILTER
IC101~103 CHARACTOR GENERATOR
IC007 CHIP SELECT
IC008 NON-VOLATILE MEMORY
VIDEO(2)
HR-10 BOARD REC/PB AMP
FLYING ERASE
Q272,273
REC 5V
OTL (REC Y RF)
Q229,231
RF 5V
PB RF AMP MIDDLE TUNING AMP
Q230,232
VA PB 5V
CH1' HEAD AMP
IC202 SP/LP.CLOG DETECT
IC204 E/L DISCRIMINATOR
Q240
D001
Q010
SYSTEM RESET (CN006 26)
Q004,005 5V REG
LM 5V
VCC
VOLTAGE ERROR AMP
CAP PWM LPF
IC003
S REEL FG SENSOR
TAPE END SENSOR
(See page 153.)
FP-89 BOARD
TAPE TOP SENSOR
TAPE LED
T REEL FG SENSOR
(See page 153.)
CC-60 BOARD
FP-90 BOARD
(See page 153.)
CAM UNREG2
Q 652,653 654,656
CURRENT LIMITER
AF UNREG
AUTO FOCUS
AF BOARD
IC651 655,656 IRIS DRIVE HALL AMP
IC653 ZOOM MOTOR DRIVE
IC501 CAMERA CONTROL
IC301,504 EVR
SS 4.9V
CAM DD ON

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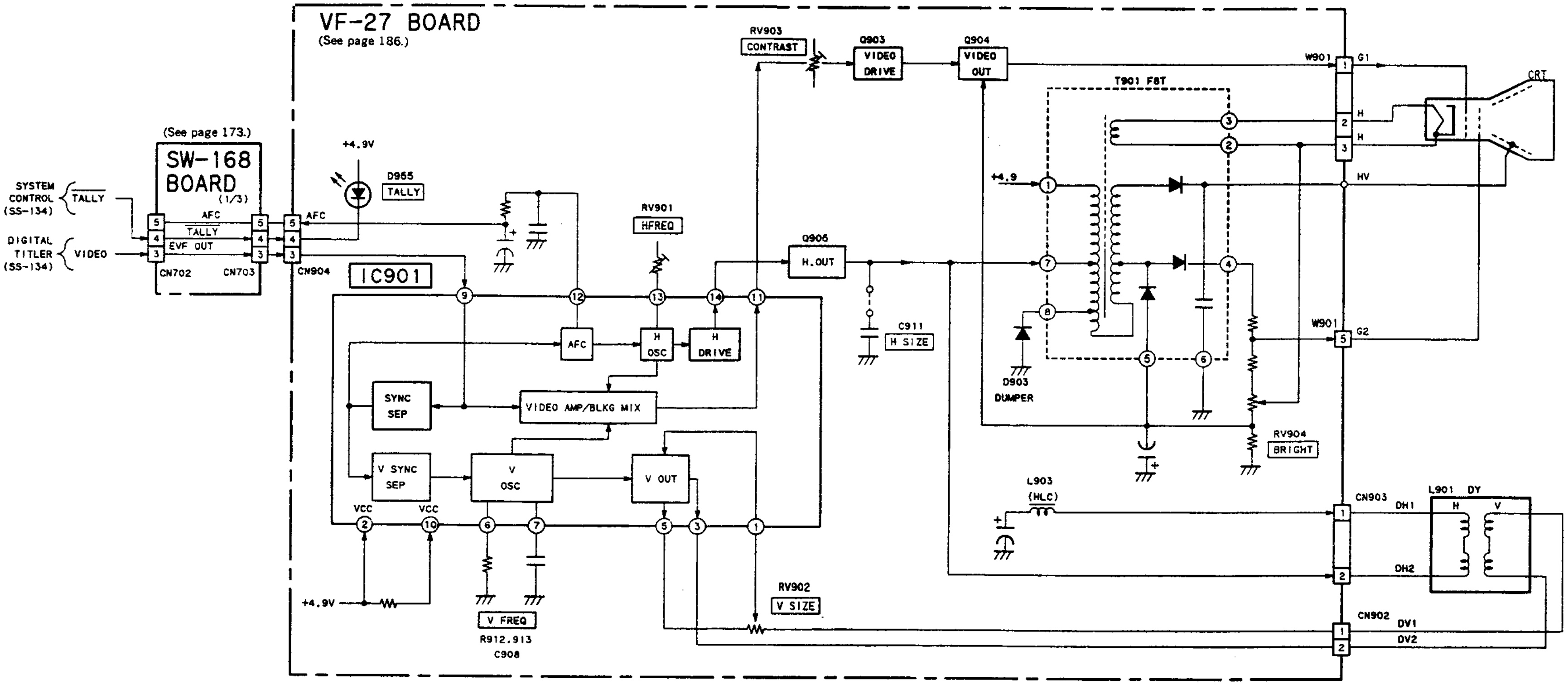
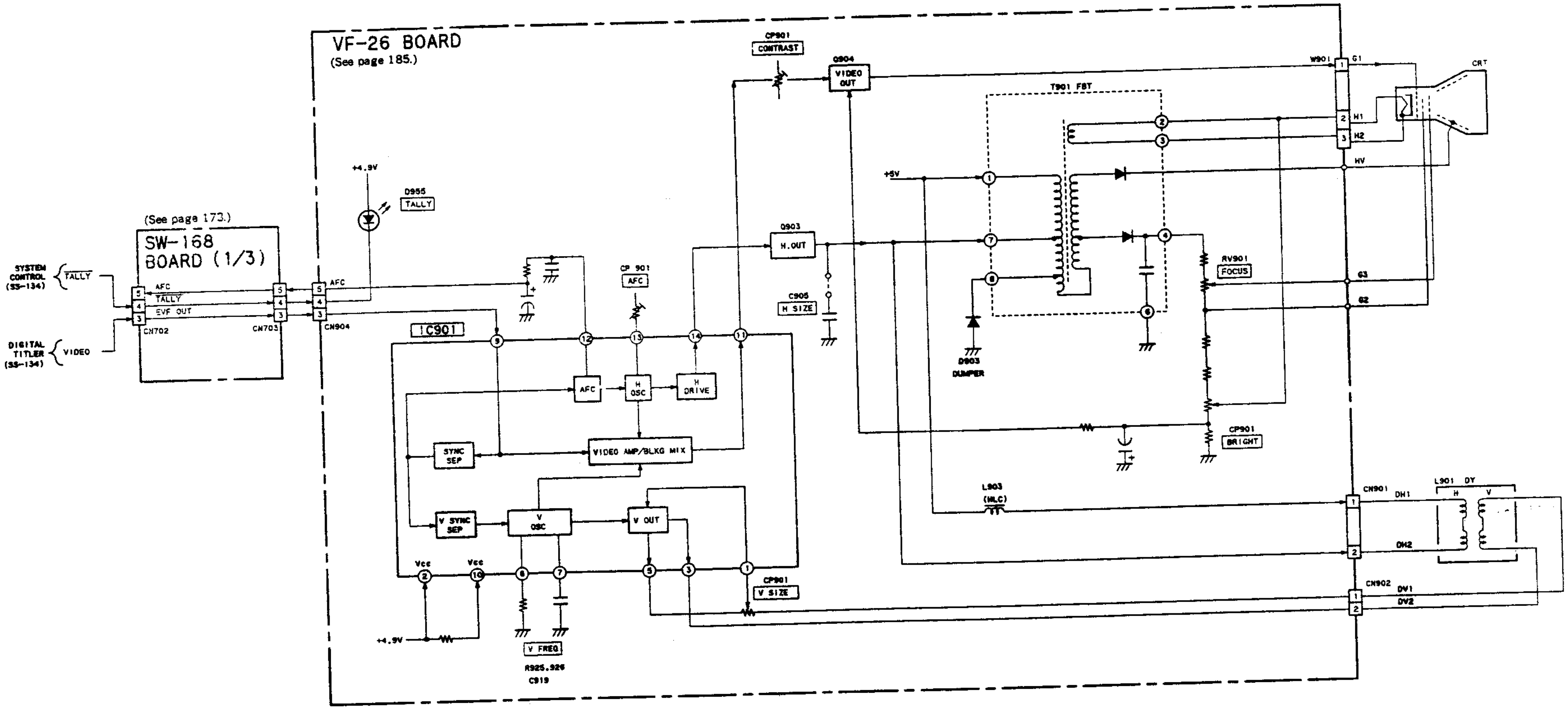
3-15. VIEWFINDER (A) BLOCK DIAGRAM


VF-27 BOARD
(See page 186.)
(See page 173.)
SW-168 BOARD (1/3)
SYSTEM CONTROL (SS-134)
TALLY
DIGITAL TITLER (SS-134)
VIDEO
AFC
TALLY
EVF OUT
CN702
CN703
CN904
+4.9V
D955
TALLY
IC901
RV901
HFREQ
RV903
CONTRAST
Q903
VIDEO DRIVE
Q904
VIDEO OUT
Q905
H.OUT
C911
H SIZE
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
VCC
VCC
+4.9V
V FREQ
R912,913
C908
RV902
V SIZE
T901 FBT
+4.9
D903
DUMPER
RV904
BRIGHT
L903
(HLC)
W901
G1
H
H
HV
G2
CRT
CN903
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

3-16. VIEWFINDER (B) BLOCK DIAGRAM


VF-26 BOARD
(See page 185.)
(See page 173.)
SW-168
BOARD (1/3)
SYSTEM CONTROL (SS-134)
TALLY
DIGITAL TITLER (SS-134)
VIDEO
AFC
TALLY
EVF OUT
CN702
CN703
CN904
+4.9V
D955
TALLY
CP901
CONTRAST
Q904
VIDEO OUT
T901 FBT
+5V
Q903
H.OUT
C905
H SIZE
CP 901
AFC
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
Vcc
Vcc
+4.9V
V FREQ
R925,926
C919
CP901
V SIZE
D903
DUMPER
RV901
FOCUS
CP901
BRIGHT
L903
(HLC)
W901
G1
H1
H2
HV
G3
G2
CRT
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

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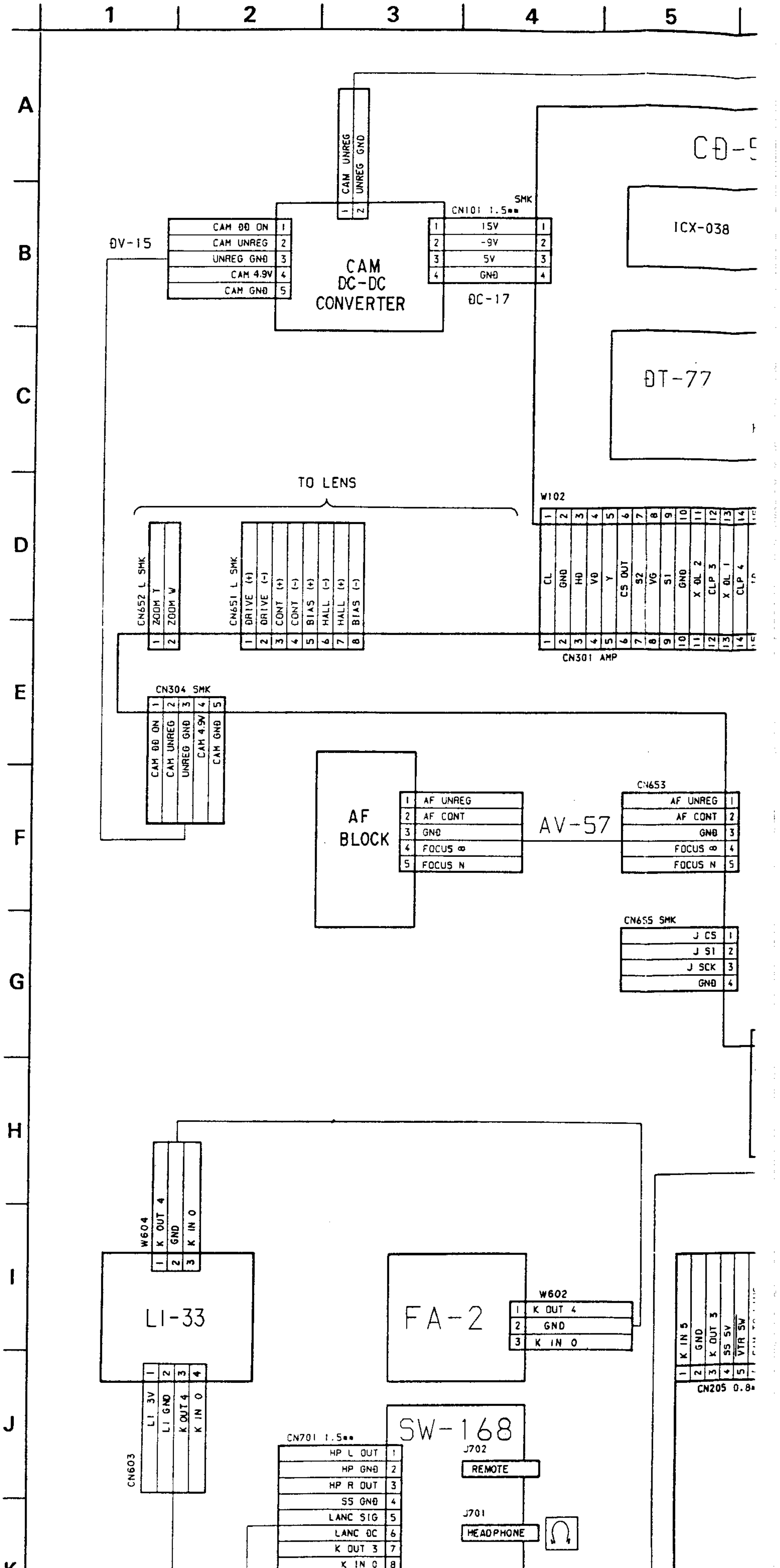
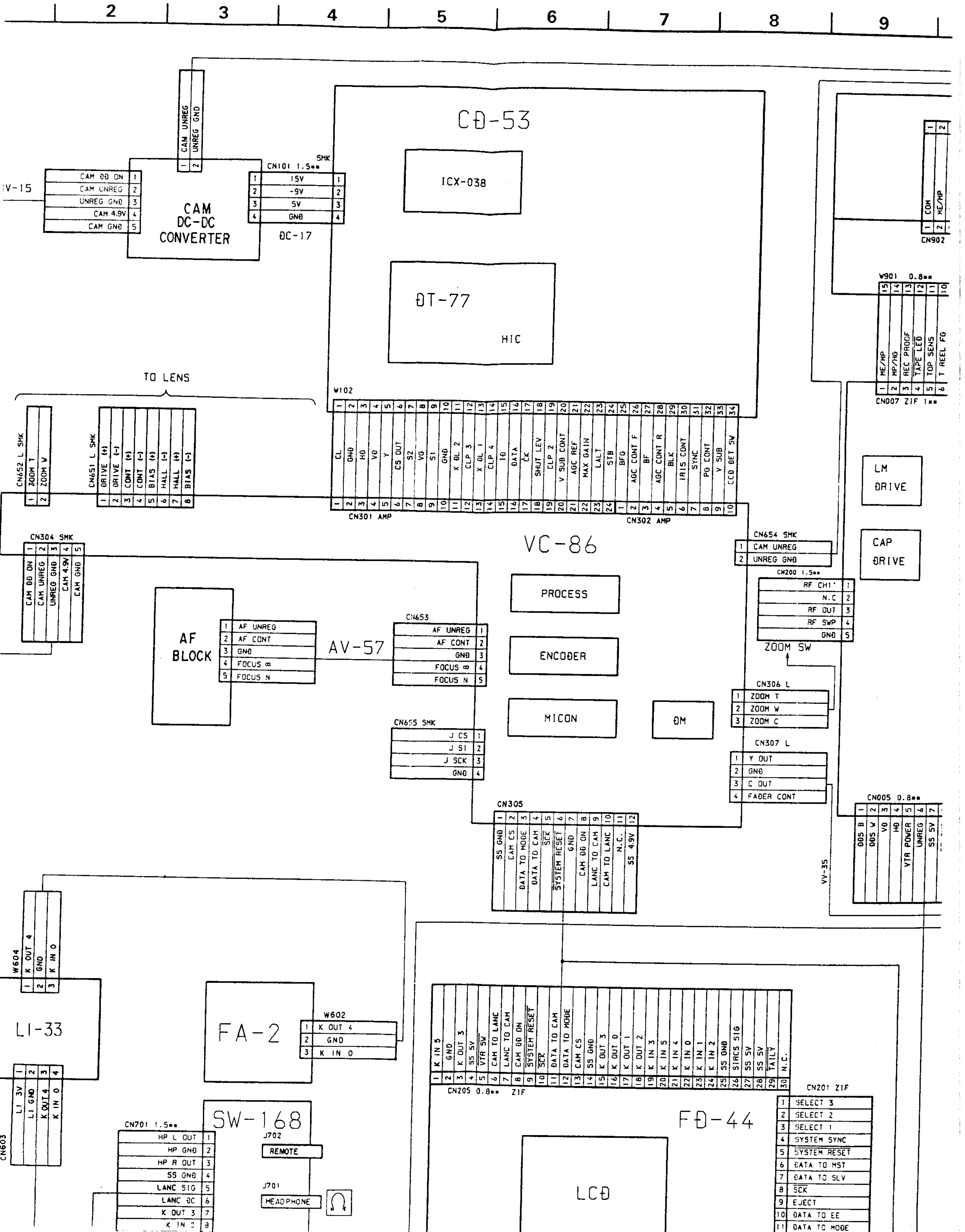
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAI

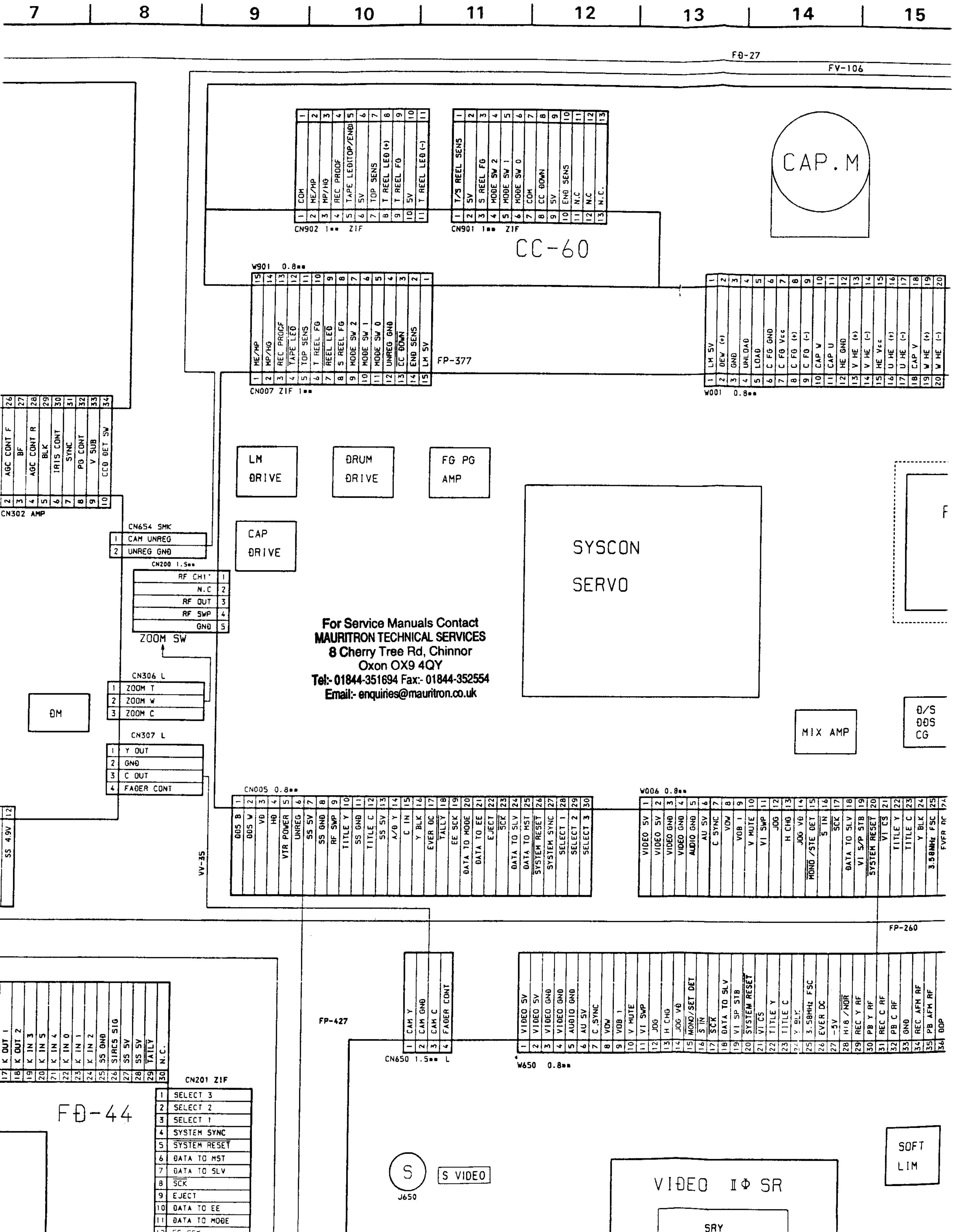
4-1. FRAME SCHEMATIC DIAGRAM


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
K
CAM UNREG
UNREG GND
CD-5
ICX-038
DV-15
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
CAM
DC-DC
CONVERTER
SMK
CN101 1.5mm
15V
-9V
5V
GND
DC-17
DT-77
TO LENS
W102
CN652 L SMK
ZOOM T
ZOOM W
CN651 L SMK
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
X OL 2
CLP 3
X OL 1
CLP 4
CN301 AMP
CN304 SMK
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
AF
BLOCK
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
AV-57
CN653
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
CN655 SMK
J CS
J SI
J SCK
GND
W604
K OUT 4
GND
K IN O
LI-33
FA-2
W602
K OUT 4
GND
K IN O
K IN 5
GND
K OUT 3
SS 5V
VTR SW
CN205 0.8m
CN603
LI 3V
LI GND
K OUT 4
K IN O
SW-168
CN701 1.5mm
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
K OUT 3
K IN O
J702
REMOTE
J701
HEADPHONE

SECTION 4
RINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

AME SCHEMATIC DIAGRAM


2
3
4
5
6
7
8
9
CAM UNREG
UNREG GND
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
V-15
CAM
DC-DC
CONVERTER
SMK
CN101 1.5mm
15V
-9V
5V
GND
DC-17
CD-53
ICX-038
DT-77
HIC
TO LENS
CN652 L SMK
ZOOM T
ZOOM W
CN651 L SMK
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
W102
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
X DL 2
CLP 3
X DL 1
CLP 4
ID
DATA
CK
SHUT LEV
CLP 2
V SUB CONT
AGC REF
MAX GAIN
LALT
STB
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
V SUB
CCD DET SW
CN301 AMP
CN302 AMP
VC-86
CN304 SMK
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
AF
BLOCK
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
AV-57
CN653
PROCESS
ENCODER
MICON
DM
CN655 SMK
J CS
J SI
J SCK
GND
CN654 SMK
CAM UNREG
UNREG GND
CN200 1.5mm
RF CH1
N.C
RF OUT
RF SWP
GND
ZOOM SW
CN306 L
ZOOM T
ZOOM W
ZOOM C
CN307 L
Y OUT
GND
C OUT
FADER CONT
CN305
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
GND
CAM DD ON
LANC TO CAM
CAM TO LANC
N.C.
SS 4.9V
COM
ME/HP
CN902
W901 0.8mm
ME/HP
HP/HG
REC PROOF
TAPE LED
TOP SENS
T REEL FG
CN007 ZIF 1mm
LM
DRIVE
CAP
DRIVE
CN005 0.8mm
DDS B
DDS V
VD
HD
VTR POWER
UNREG
SS 5V
VV-35
W604
K OUT 4
GND
K IN 0
LI-33
LI 3V
LI GND
K OUT 4
K IN 0
CN603
FA-2
W602
K OUT 4
GND
K IN 0
SW-168
CN701 1.5mm
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
K OUT 3
K IN 3
J702
REMOTE
J701
HEADPHONE
K IN 5
GND
K OUT 3
SS 5V
VTR SW
CAM TO LANC
LANC TO CAM
CAM DD ON
SYSTEM RESET
SCK
DATA TO CAM
DATA TO MODE
CAM CS
SS GND
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
SS GND
SIRCS SIG
SS 5V
SS 5V
TAILY
N.C.
CN205 0.8mm ZIF
FD-44
LCD
CN201 ZIF
SELECT 3
SELECT 2
SELECT 1
SYSTEM SYNC
SYSTEM RESET
DATA TO MST
DATA TO SLV
SCK
EJECT
DATA TO EE
DATA TO MODE


7
8
9
10
11
12
13
14
15
FD-27
FV-106
COM
HE/HP
HP/HG
REC PROOF
TAPE LED(TOP/END)
5V
TOP SENS
T REEL LED (+)
T REEL FG
5V
T REEL LED (-)
CN902 1mm ZIF
T/S REEL SENS
5V
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
COM
CC DOWN
5V
END SENS
N.C
N.C
N.C.
CN901 1mm ZIF
CAP.M
CC-60
W901 0.8mm
HE/HP
MP/HG
REC PROOF
TAPE LED
TOP SENS
T REEL FG
T REEL LED
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
UNREG GND
CC DOWN
END SENS
LM 5V
FP-377
CN007 ZIF 1mm
LM 5V
DEW (+)
GND
UNLOAD
LOAD
C FG GND
C FG Vcc
C FG (+)
C FG (-)
CAP W
CAP U
HE GND
V HE (+)
V HE (-)
HE Vcc
U HE (+)
U HE (-)
CAP V
W HE (+)
W HE (-)
W001 0.8mm
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
V SUB
CCD DET SW
CN302 AMP
CN654 SMK
CAM UNREG
UNREG GND
CN200 1.5mm
RF CH1
N.C
RF OUT
RF SWP
GND
ZOOM SW
CN306 L
ZOOM T
ZOOM W
ZOOM C
DM
CN307 L
Y OUT
GND
C OUT
FADER CONT
LM DRIVE
DRUM DRIVE
FG PG AMP
CAP DRIVE
SYSCON SERVO
MIX AMP
D/S DDS CG
F
CN005 0.8mm
DDS B
DDS W
VD
HD
VTR POWER
UNREG
SS 5V
SS GND
RF SWP
TITLE Y
SS GND
TITLE C
SS 5V
A/D Y
C IN
Y BLK
EVER DC
TALLY
EE SCK
DATA TO MODE
DATA TO EE
EJECT
SCK
DATA TO SLV
DATA TO MST
SYSTEM RESET
SYSTEM SYNC
SELECT 1
SELECT 2
SELECT 3
VV-35
SS 4.9V
W006 0.8mm
VIDEO 5V
VIDEO 5V
VIDEO GND
VIDEO GND
AUDIO GND
AU 5V
C SYNC
VDW
VDB 1
V MUTE
VI SWP
JOG
H CHG
JOG VD
MONO/STE DET
S IN
SCK
DATA TO SLV
VI S/P STB
SYSTEM RESET
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
FP-260
FP-427
CAM Y
CAM GND
CAM C
FADER CONT
CN650 1.5mm L
VIDEO 5V
VIDEO 5V
VIDEO GND
AUDIO GND
AU 5V
C SYNC
VDW
VDB 1
V MUTE
VI SWP
JOG
H CHG
JOG VD
MONO/SET DET
S IN
SCK
DATA TO SLV
VI SP STB
SYSTEM RESET
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
EVER DC
-5V
H18/NOR
REC Y RF
PB Y RF
REC C RF
PB C RF
GND
REC AFM RF
PB AFM RF
DOP
W650 0.8mm
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
SS GND
SIRCS SIG
SS 5V
SS 5V
TAILY
N.C.
FD-44
CN201 ZIF
SELECT 3
SELECT 2
SELECT 1
SYSTEM SYNC
SYSTEM RESET
DATA TO MST
DATA TO SLV
SCK
EJECT
DATA TO EE
DATA TO MODE
S
J650
S VIDEO
VIDEO IΦ SR
SRY
SOFT LIM

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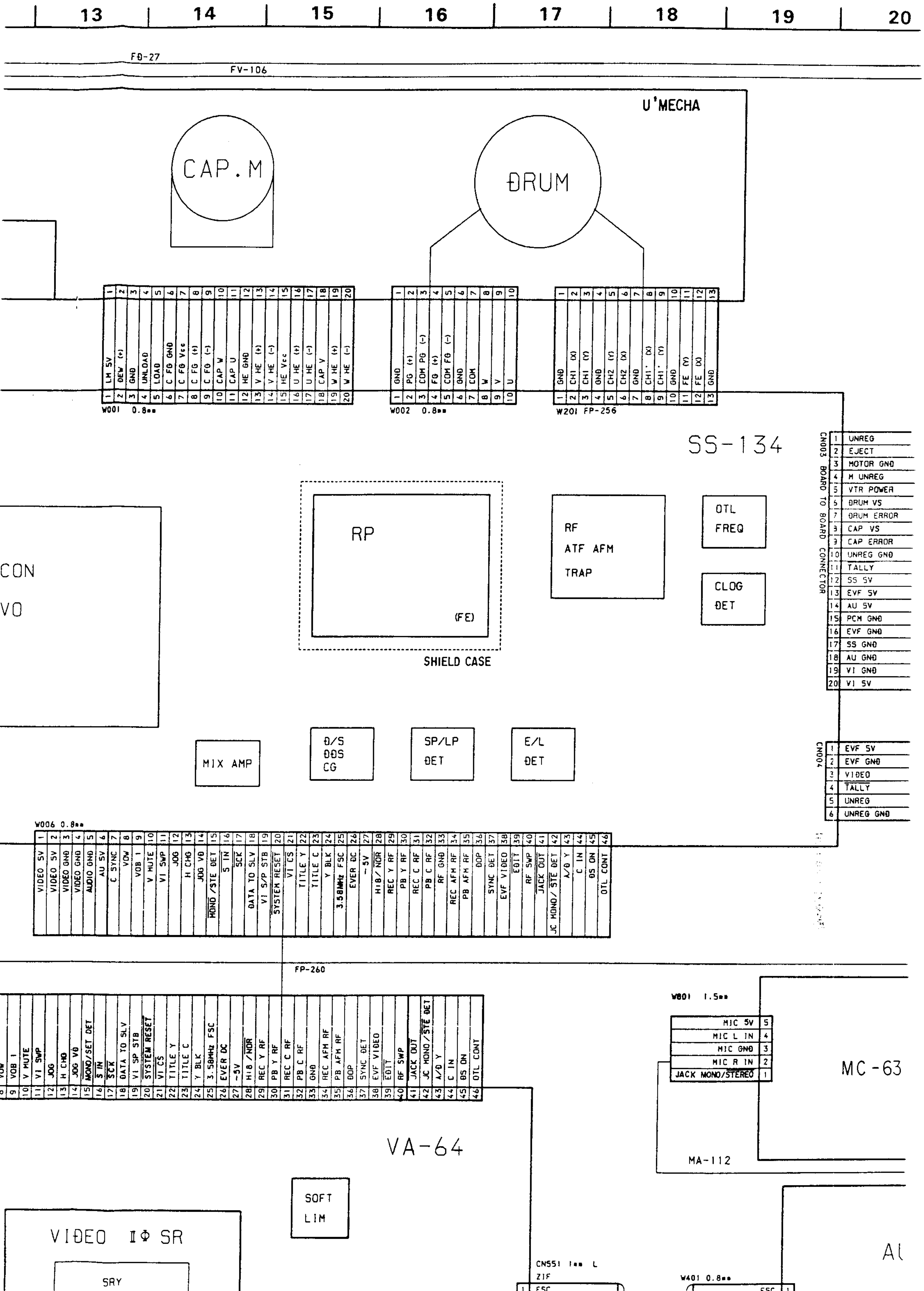
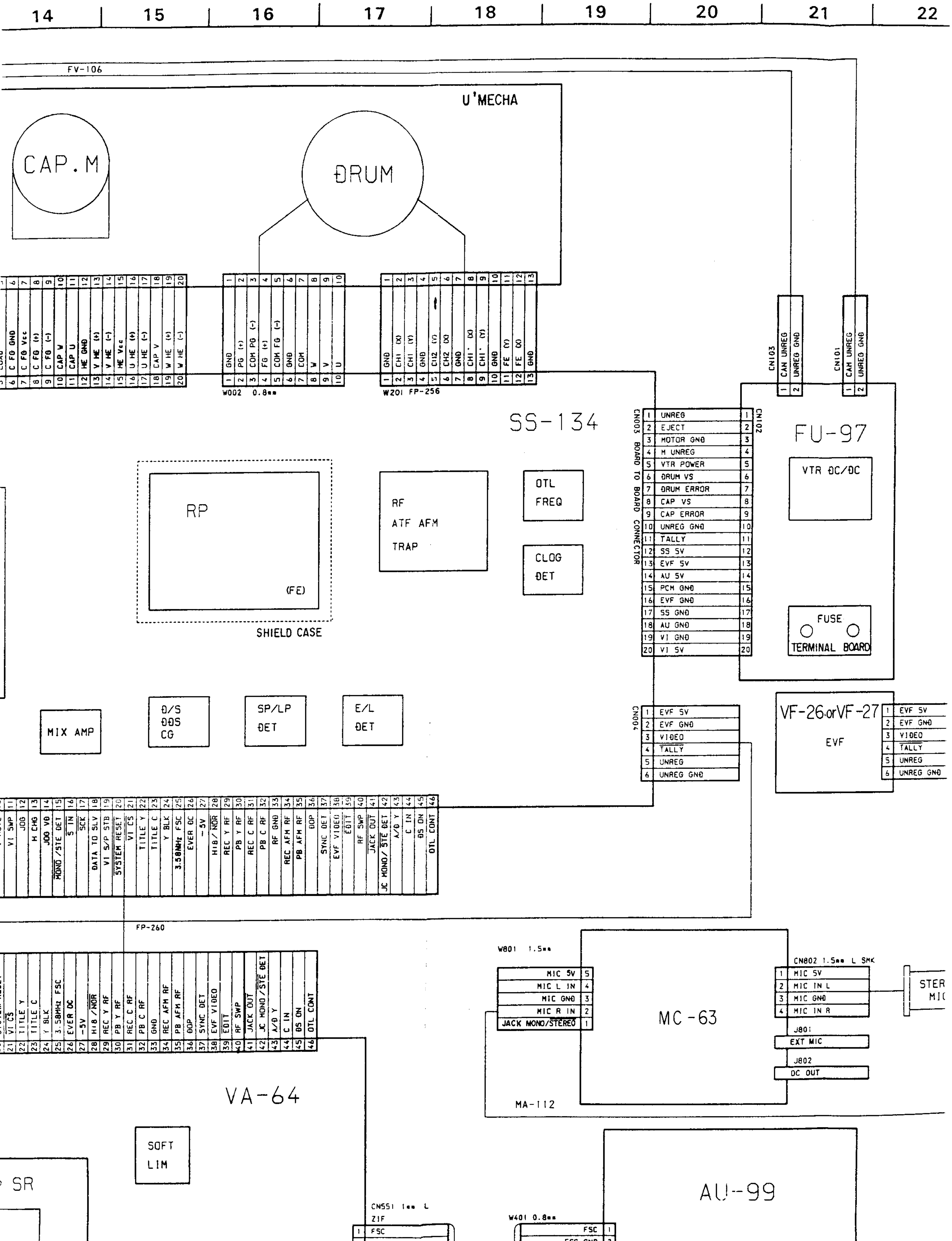
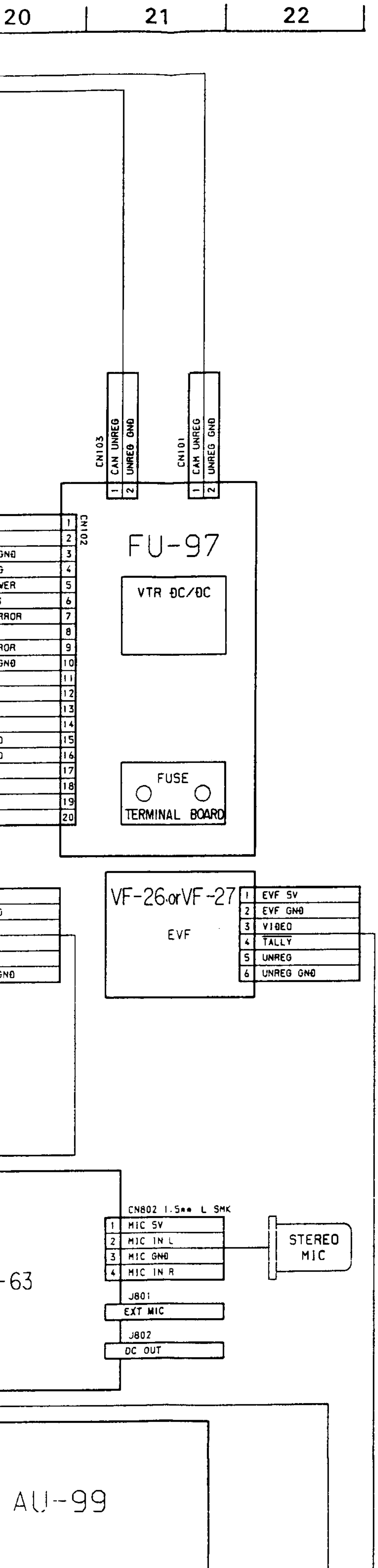

13
14
15
16
17
18
19
20
FD-27
FV-106
U'MECHA
CAP.M
DRUM
1 LM 5V
2 DEW (+)
3 GND
4 UNLOAD
5 LOAD
6 C FG GND
7 C FG Vcc
8 C FG (+)
9 C FG (-)
10 CAP W
11 CAP U
12 HE GND
13 V HE (+)
14 V HE (-)
15 HE Vcc
16 U HE (+)
17 U HE (-)
18 CAP V
19 W HE (+)
20 W HE (-)
W001 0.8mm
1 GND
2 PG (+)
3 COM PG (-)
4 FG (+)
5 COM FG (-)
6 GND
7 COM
8 W
9 V
10 U
W002 0.8mm
1 GND
2 CH1 (X)
3 CH1 (Y)
4 GND
5 CH2 (Y)
6 CH2 (X)
7 GND
8 CH1' (X)
9 CH1' (Y)
10 GND
11 FE (Y)
12 FE (X)
13 GND
W201 FP-256
SS-134
CN003 BOARD TO BOARD CONNECTOR
1 UNREG
2 EJECT
3 MOTOR GND
4 M UNREG
5 VTR POWER
6 DRUM VS
7 DRUM ERROR
8 CAP VS
9 CAP ERROR
10 UNREG GND
11 TALLY
12 SS 5V
13 EVF 5V
14 AU 5V
15 PCM GND
16 EVF GND
17 SS GND
18 AU GND
19 VI GND
20 VI 5V
CON
VO
RP
(FE)
SHIELD CASE
RF
ATF AFM
TRAP
OTL
FREQ
CLOG
DET
MIX AMP
D/S
DDS
CG
SP/LP
DET
E/L
DET
CN004
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
W006 0.8mm
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C SYNC
8 VDW
9 VDB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO /STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI S/P STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HI8/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
FP-260
8 VDW
9 VDB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/SET DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI SP STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HI8 /NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
VA-64
SOFT
LIM
VIDEO IΦ SR
SRY
W801 1.5mm
MIC 5V 5
MIC L IN 4
MIC GND 3
MIC R IN 2
JACK MONO/STEREO 1
MC-63
MA-112
CN551 1mm L
ZIF
1 FSC
W401 0.8mm
FSC 1
Al

14
15
16
17
18
19
20
21
22
FV-106
U'MECHA
CAP.M
DRUM
C FG GND
C FG Vcc
C FG (+)
C FG (-)
CAP W
CAP U
HE GND
V HE (+)
V HE (-)
HE Vcc
U HE (+)
U HE (-)
CAP V
W HE (+)
W HE (-)
GND
PG (+)
COM PG (-)
FG (+)
COM FG (-)
GND
COM
W
V
U
W002 0.8mm
GND
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
GND
CH1' (X)
CH1' (Y)
GND
FE (Y)
FE (X)
GND
W201 FP-256
CN103
CAM UNREG
UNREG GND
CN101
CAM UNREG
UNREG GND
SS-134
CN003 BOARD TO BOARD CONNECTOR
1 UNREG
2 EJECT
3 MOTOR GND
4 M UNREG
5 VTR POWER
6 DRUM VS
7 DRUM ERROR
8 CAP VS
9 CAP ERROR
10 UNREG GND
11 TALLY
12 SS 5V
13 EVF 5V
14 AU 5V
15 PCM GND
16 EVF GND
17 SS GND
18 AU GND
19 VI GND
20 VI 5V
CN102
FU-97
VTR DC/DC
FUSE
TERMINAL BOARD
RP
(FE)
SHIELD CASE
RF
ATF AFM
TRAP
OTL
FREQ
CLOG
DET
MIX AMP
D/S
DDS
CG
SP/LP
DET
E/L
DET
CN004
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
VF-26 or VF-27
EVF
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
VI SWP
JOG
H CHG
JOG VD
MONO /STE DET
S IN
SCK
DATA TO SLV
VI S/P STB
SYSTEM RESET
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
EVER DC
-5V
HI8 / NOR
REC Y RF
PB Y RF
REC C RF
PB C RF
RF GND
REC AFM RF
PB AFM RF
DOP
SYNC DET
EVF VIDEO
EDIT
RF SWP
JACK OUT
JC MONO/ STE DET
A/D Y
C IN
DS ON
OTL CONT
FP-260
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
EVER DC
-5V
HI8 /NOR
REC Y RF
PB Y RF
REC C RF
PB C RF
GND
REC AFM RF
PB AFM RF
DOP
SYNC DET
EVF VIDEO
EDIT
RF SWP
JACK OUT
JC MONO /STE DET
A/D Y
C IN
DS ON
OTL CONT
VA-64
SOFT
LIM
SR
W801 1.5mm
MIC 5V 5
MIC L IN 4
MIC GND 3
MIC R IN 2
JACK MONO/STEREO 1
MC-63
CN802 1.5mm L SMK
1 MIC 5V
2 MIC IN L
3 MIC GND
4 MIC IN R
STER
MI
J801
EXT MIC
J802
DC OUT
MA-112
AU-99
CN551 1mm L
ZIF
1 FSC
W401 0.8mm
FSC 1


20
21
22
CN103
CAN UNREG
UNREG GND
CN101
CAM UNREG
UNREG GND
CN102
FU-97
VTR DC/DC
FUSE
TERMINAL BOARD
VF-26orVF-27
EVF
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN802 1.5mm L SMK
MIC 5V
MIC IN L
MIC GND
MIC IN R
STEREO MIC
J801
EXT MIC
J802
DC OUT
-63
AU-99

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side. *
- Circled numbers refer to waveforms. *

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W or 1/16W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.

- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair. *
- ━━ : B + Line *
- Circled numbers refer to waveforms. *
- ⇨ : IN/OUT direction of B (+, −) line. *

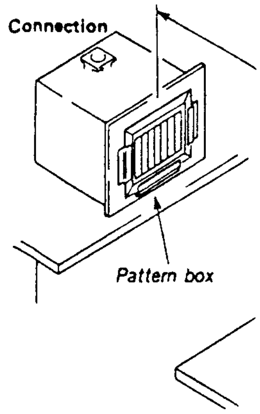
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

* Indicated by the color red.

- **For voltage and waveforms**
- Voltage and waveform measu
  (1) Sample object: Pattern
  (2) Voltage values: Relativ
  a DC d
  10M-ol

1. Connection


Pattern box

2. Adjust the zooming of cam the output waveform of Fig can be obtain.

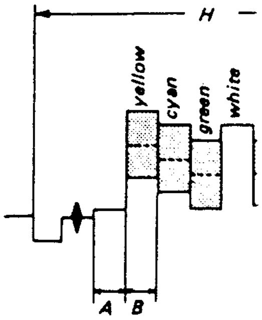

H
yellow
cyan
green
white
A
B

Fig. a Video output w

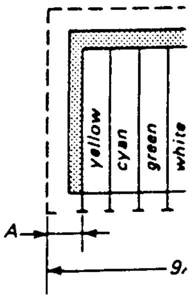

yellow
cyan
green
white
A
9.

Fig. b Picture of

- **For voltage and waveforms.**
- Voltages are dc between grou
- Readings are taken with a colo
- Readings are taken with a dig
- Voltage variations may be production tolerances. *

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[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red sa shown below. This enables to find the location on the board easily when servicing.

Q187(F-21)Q188(F-22) Q195(C-12)

NTED WIRING BOARDS

ıote is printed in each block.)

eing.

f chip.
tantalum capacitor,

V unless otherwise noted.

ed. pF : μμF.
ectrolytics and

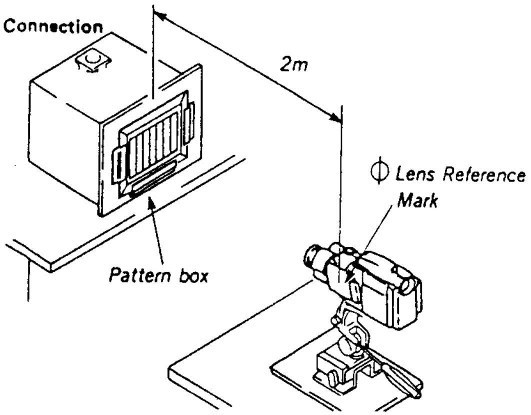
characteristic curve B,

dentifiés par
nt critiques

que par une
uméro spéci-

- **For voltage and waveforms. (CAM REC mode)**
- Voltage and waveform measuring conditions: *
  - (1) Sample object: Pattern box color bars. *
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more). *

1. Connection



2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

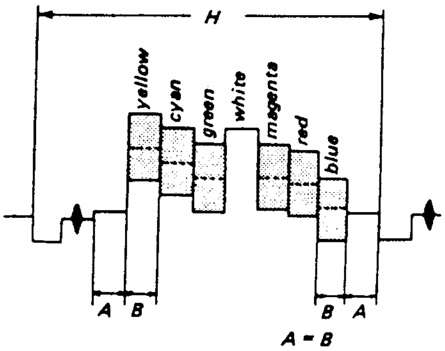


Fig. a Video output waveform.

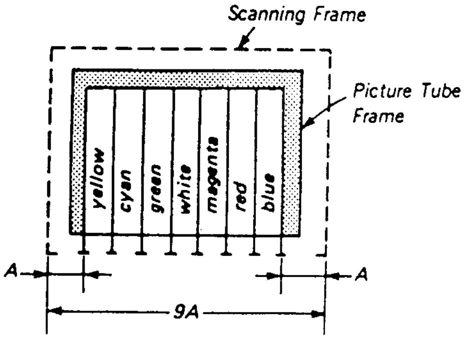


Fig. b Picture of TV monitor screen

- **For voltage and waveforms. (REC/PB mode)**
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

tions of the
ated in red sa
on the board

I88(E-22)
PF
Q188
Q195(C-12)
BUFFER
(C-12)

Precautions for replacement of CCD imager block.

- With a pair of IC101 (CCD imager) on the CD-53 complete board and IC001 (corrector ROM) on the DT-77 complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC101 (CCD imager) is not mounted on the CD-53 complete board to be supplied as a repair part, and IC001 (corrector ROM) is not mounted on the DT-77 complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new once respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity.
  For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

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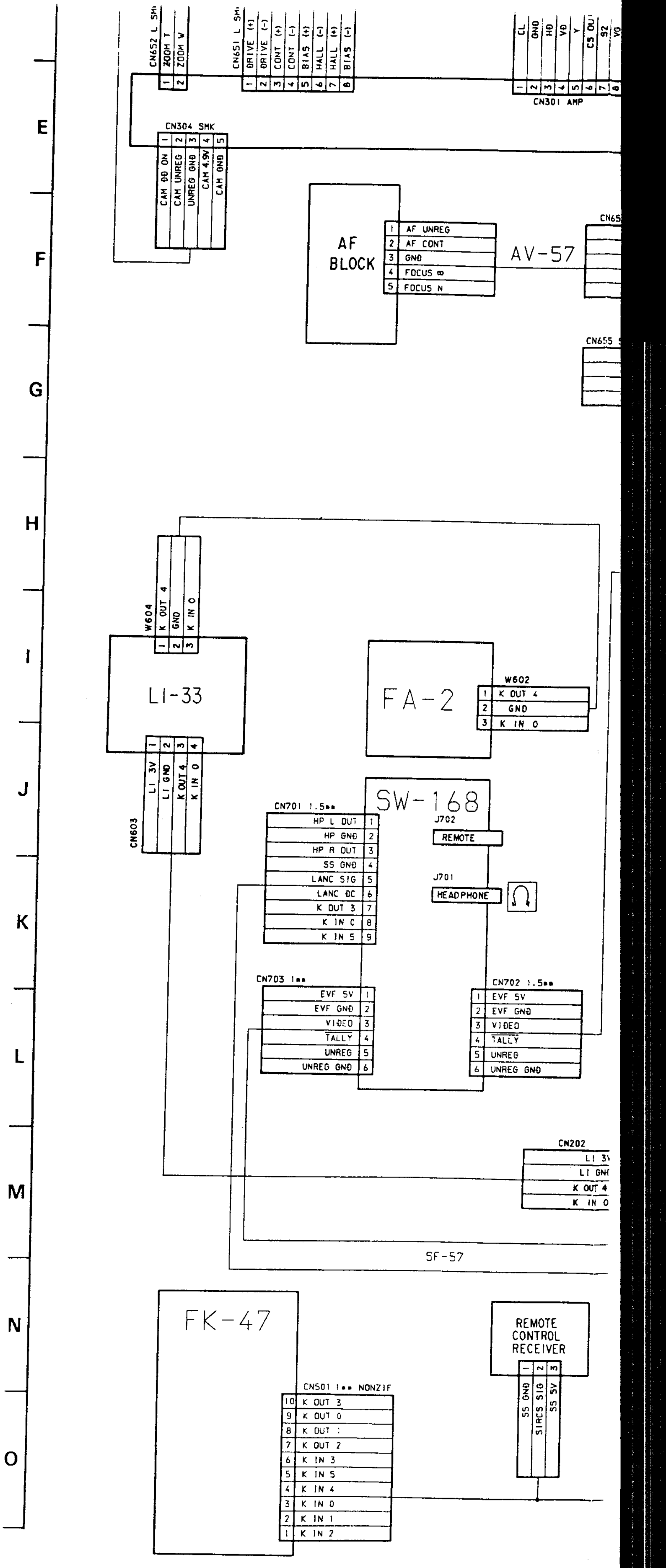
[Semiconductor for Correction List Display]
Part code and part name of the semiconductor for correction of the print board is described in the space of each print figure. Use this list when ordering parts.


E
F
G
H
I
J
K
L
M
N
O
CN652 L SM
ZOOM T
ZOOM W
CN651 L SM
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
CL
GND
HD
VD
Y
CS OUT
S2
VG
CN301 AMP
CN304 SMK
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
AF BLOCK
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
AV-57
CN65
CN655
W604
K OUT 4
GND
K IN 0
LI-33
FA-2
W602
K OUT 4
GND
K IN 0
CN603
LI 3V
LI GND
K OUT 4
K IN 0
SW-168
CN701 1.5mm
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
K OUT 3
K IN 0
K IN 5
J702
REMOTE
J701
HEADPHONE
CN703 1mm
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN702 1.5mm
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN202
LI 3V
LI GND
K OUT 4
K IN 0
SF-57
FK-47
CN501 1mm NONZIF
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
REMOTE CONTROL RECEIVER
SS GND
SIRCS SIG
SS 5V

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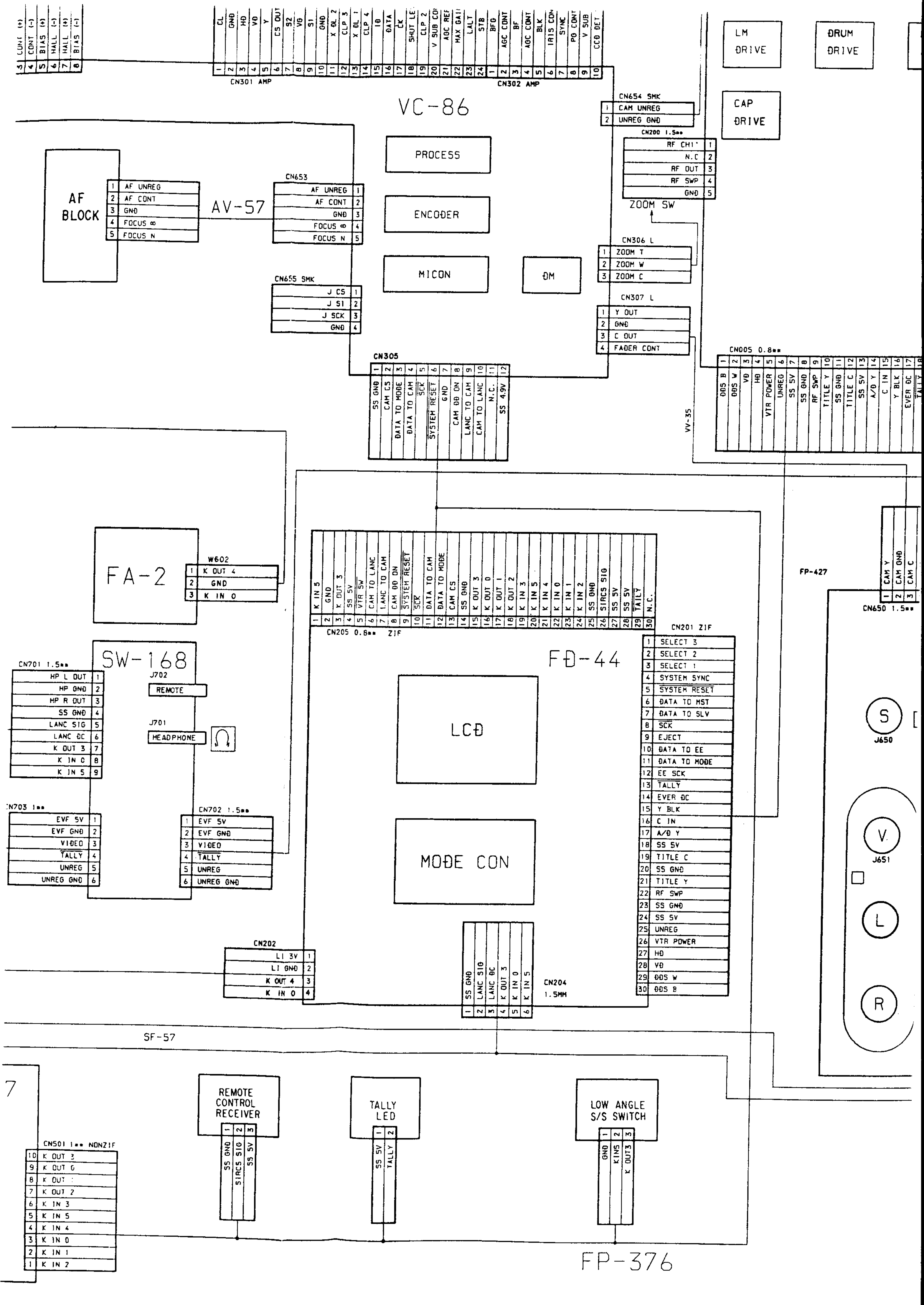
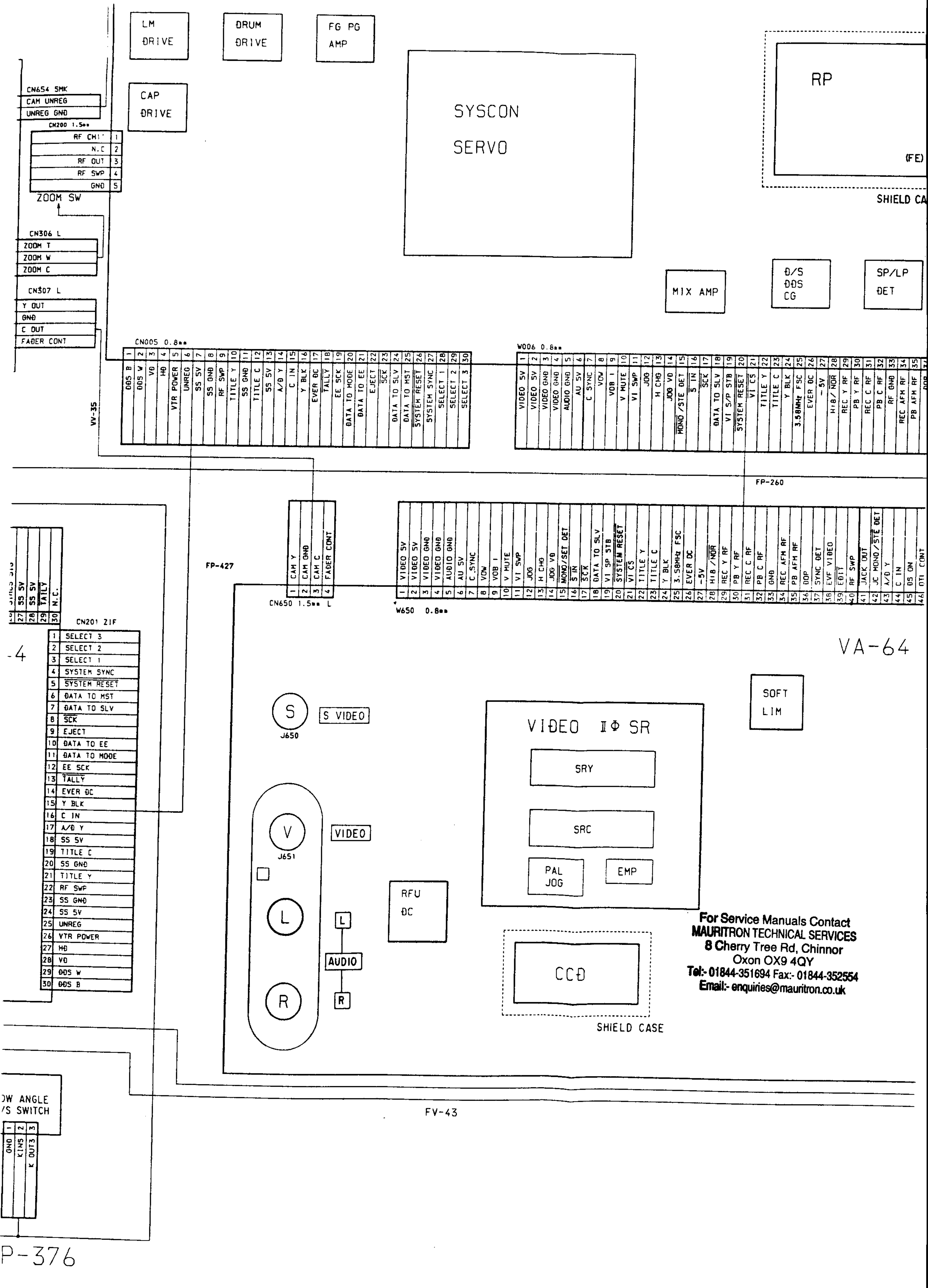
Email:- enquiries@mauritron.co.uk


CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
X DL 2
CLP 3
X DL 1
CLP 4
IO
DATA
CK
SHUT LE
CLP 2
V SUB CO
AGC REF
MAX GAI
LALT
STB
BFG
AGC CONT
BF
AGC CONT
BLK
IRIS CON
SYNC
PO CONT
V SUB
CCD DET
CN301 AMP
CN302 AMP
VC-86
PROCESS
ENCODER
MICON
DM
LM DRIVE
DRUM DRIVE
CAP DRIVE
CN654 SMK
CAM UNREG
UNREG GND
CN200 1.5mm
RF CH1
N.C
RF OUT
RF SWP
GND
ZOOM SW
CN306 L
ZOOM T
ZOOM W
ZOOM C
CN307 L
Y OUT
GND
C OUT
FADER CONT
AF BLOCK
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
AV-57
CN653
CN655 SMK
J CS
J SI
J SCK
GND
CN305
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
GND
CAM DD ON
LANC TO CAM
CAM TO LANC
N.C.
SS 4.9V
CN005 0.8mm
DDS B
DDS W
VD
HD
VTR POWER
UNREG
SS 5V
SS GND
RF SWP
TITLE Y
SS GND
TITLE C
SS 5V
A/D Y
C IN
Y BLK
EVER DC
TALLY
VV-35
FA-2
W602
K OUT 4
GND
K IN 0
K IN 5
GND
K OUT 3
SS 5V
VTR SW
CAM TO LANC
LANC TO CAM
CAM DD ON
SYSTEM RESET
SCK
DATA TO CAM
DATA TO MODE
CAM CS
SS GND
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 4
K IN 0
K IN 1
K IN 2
SS GND
SIRCS SIG
SS 5V
SS 5V
TALLY
N.C.
CN205 0.8mm ZIF
CN201 ZIF
FD-44
SELECT 3
SELECT 2
SELECT 1
SYSTEM SYNC
SYSTEM RESET
DATA TO MST
DATA TO SLV
SCK
EJECT
DATA TO EE
DATA TO MODE
EE SCK
TALLY
EVER DC
Y BLK
C IN
A/D Y
SS 5V
TITLE C
SS GND
TITLE Y
RF SWP
SS GND
SS 5V
UNREG
VTR POWER
HD
VD
DDS W
DDS B
LCD
MODE CON
FP-427
CAM Y
CAM GND
CAM C
CN650 1.5mm
J650
J651
S
V
L
R
SW-168
CN701 1.5mm
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
K OUT 3
K IN 0
K IN 5
J702
REMOTE
J701
HEADPHONE
CN703 1mm
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN702 1.5mm
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN202
LI 3V
LI GND
K OUT 4
K IN 0
CN204 1.5MM
SS GND
LANC SIG
LANC DC
K OUT 3
K IN 0
K IN 5
SF-57
7
REMOTE CONTROL RECEIVER
SS GND
SIRCS SIG
SS 5V
TALLY LED
SS 5V
TALLY
LOW ANGLE S/S SWITCH
GND
KIN5
K OUT3
CN501 1mm NONZIF
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
FP-376


LM DRIVE
DRUM DRIVE
FG PG AMP
CAP DRIVE
SYSCON
SERVO
RP
(FE)
SHIELD CA
MIX AMP
D/S DDS CG
SP/LP DET
CN654 5MK
CAM UNREG
UNREG GND
CN200 1.5mm
1 RF CH1
2 N.C
3 RF OUT
4 RF SWP
5 GND
ZOOM SW
CN306 L
ZOOM T
ZOOM W
ZOOM C
CN307 L
Y OUT
GND
C OUT
FADER CONT
CN005 0.8mm
1 DDS B
2 DDS W
3 VD
4 HD
5 VTR POWER
6 UNREG
7 SS 5V
8 SS GND
9 RF SWP
10 TITLE Y
11 SS GND
12 TITLE C
13 SS 5V
14 A/D Y
15 C IN
16 Y BLK
17 EVER DC
18 TALLY
19 EE SCK
20 DATA TO MODE
21 DATA TO EE
22 EJECT
23 SCK
24 DATA TO SLV
25 DATA TO MST
26 SYSTEM RESET
27 SYSTEM SYNC
28 SELECT 1
29 SELECT 2
30 SELECT 3
VV-35
W006 0.8mm
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C SYNC
8 VDW
9 VDB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI S/P STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 H18/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
FP-260
FP-427
CN650 1.5mm L
1 CAM Y
2 CAM GND
3 CAM C
4 FADER CONT
W650 0.8mm
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C.SYNC
8 VDW
9 VDB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/SET DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI SP STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 H18/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 DTI CONT
SS 5V
SS 5V
TALLY
N.C.
27 28 29 30
CN201 ZIF
1 SELECT 3
2 SELECT 2
3 SELECT 1
4 SYSTEM SYNC
5 SYSTEM RESET
6 DATA TO MST
7 DATA TO SLV
8 SCK
9 EJECT
10 DATA TO EE
11 DATA TO MODE
12 EE SCK
13 TALLY
14 EVER DC
15 Y BLK
16 C IN
17 A/D Y
18 SS 5V
19 TITLE C
20 SS GND
21 TITLE Y
22 RF SWP
23 SS GND
24 SS 5V
25 UNREG
26 VTR POWER
27 HD
28 VD
29 DDS W
30 DDS B
-4
VA-64
SOFT LIM
S
J650
S VIDEO
V
J651
VIDEO
L
R
AUDIO
L
R
RFU DC
VIDEO IΦ SR
SRY
SRC
PAL JOG
EMP
CCD
SHIELD CASE
FV-43
OW ANGLE
/S SWITCH
1 GND
2 KINS
3 K OUT3
P-376

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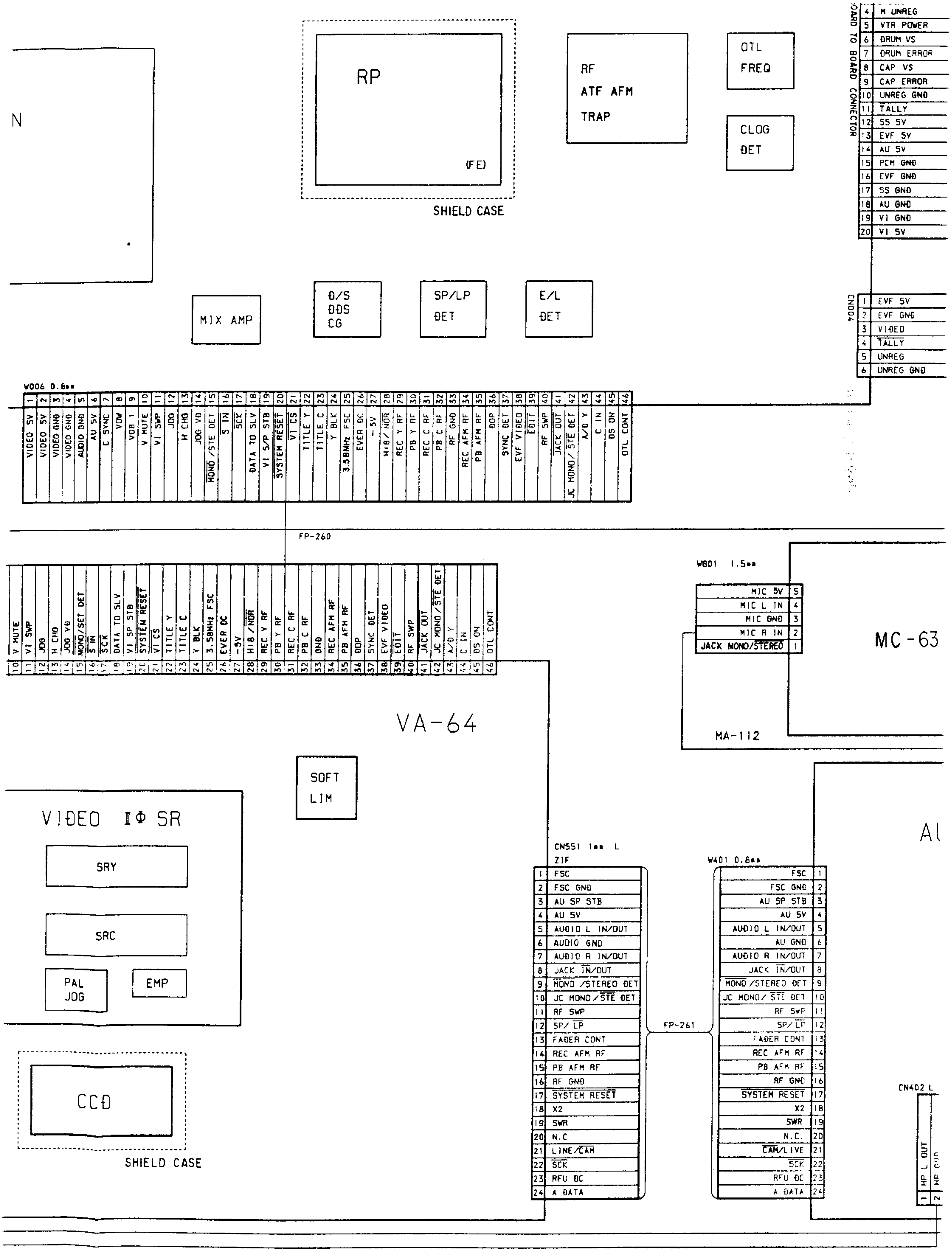
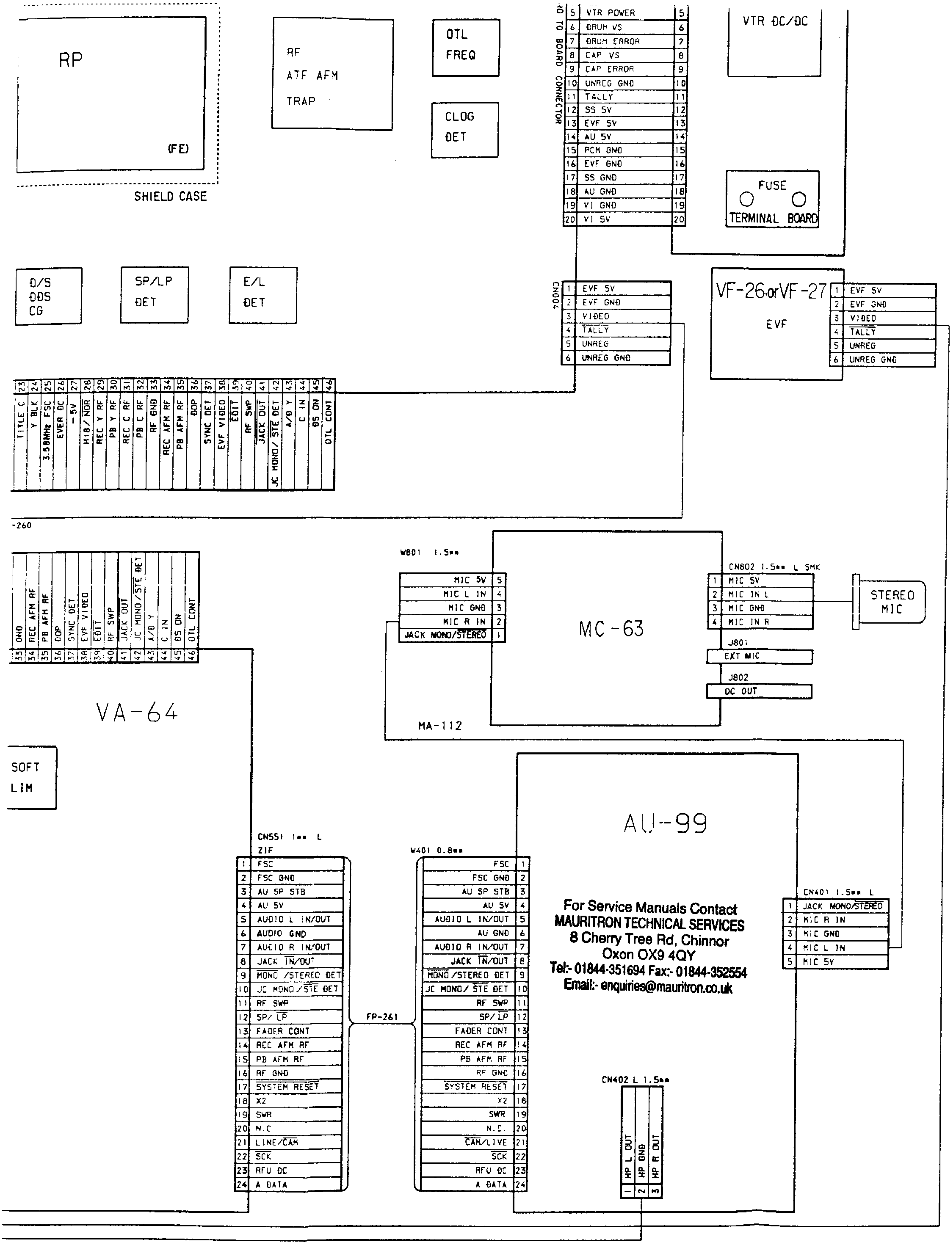

N
RP
(FE)
SHIELD CASE
RF
ATF AFM
TRAP
OTL
FREQ
CLOG
DET
OARD TO BOARD CONNECTOR
4 M UNREG
5 VTR POWER
6 DRUM VS
7 DRUM ERROR
8 CAP VS
9 CAP ERROR
10 UNREG GND
11 TALLY
12 SS 5V
13 EVF 5V
14 AU 5V
15 PCM GND
16 EVF GND
17 SS GND
18 AU GND
19 VI GND
20 VI 5V
CN004
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
MIX AMP
D/S
DDS
CG
SP/LP
DET
E/L
DET
W006 0.8mm
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C SYNC
8 VOW
9 VOB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHO
14 JOG VD
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI S/P STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HI8/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
FP-260
10 V MUTE
11 VI SWP
12 JOG
13 H CHO
14 JOG VD
15 MONO/SET DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI SP STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HI8/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
W801 1.5mm
MIC 5V 5
MIC L IN 4
MIC GND 3
MIC R IN 2
JACK MONO/STEREO 1
MC-63
MA-112
VA-64
SOFT
LIM
VIDEO IΦ SR
SRY
SRC
PAL
JOG
EMP
CCD
SHIELD CASE
AI
CN551 1mm L
ZIF
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN/OUT
6 AUDIO GND
7 AUDIO R IN/OUT
8 JACK IN/OUT
9 MONO/STEREO DET
10 JC MONO/STE DET
11 RF SWP
12 SP/LP
13 FADER CONT
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SYSTEM RESET
18 X2
19 SWR
20 N.C
21 LINE/CAM
22 SCK
23 RFU DC
24 A DATA
FP-261
W401 0.8mm
FSC 1
FSC GND 2
AU SP STB 3
AU 5V 4
AUDIO L IN/OUT 5
AU GND 6
AUDIO R IN/OUT 7
JACK IN/OUT 8
MONO/STEREO DET 9
JC MONO/STE DET 10
RF SWP 11
SP/LP 12
FADER CONT 13
REC AFM RF 14
PB AFM RF 15
RF GND 16
SYSTEM RESET 17
X2 18
SWR 19
N.C. 20
CAM/LIVE 21
SCK 22
RFU DC 23
A DATA 24
CN402 L
1 HP L OUT
2 HP GND


RP
(FE)
SHIELD CASE
RF
ATF AFM
TRAP
OTL
FREQ
CLOG
DET
TO BOARD CONNECTOR
5 VTR POWER
6 DRUM VS
7 DRUM ERROR
8 CAP VS
9 CAP ERROR
10 UNREG GND
11 TALLY
12 SS 5V
13 EVF 5V
14 AU 5V
15 PCM GND
16 EVF GND
17 SS GND
18 AU GND
19 VI GND
20 VI 5V
VTR DC/DC
FUSE
TERMINAL BOARD
D/S
DDS
CG
SP/LP
DET
E/L
DET
CN004
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
VF-26 or VF-27
EVF
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 H18/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
-260
33 GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
VA-64
SOFT
LIM
W801 1.5mm
5 MIC 5V
4 MIC L IN
3 MIC GND
2 MIC R IN
1 JACK MONO/STEREO
MC-63
MA-112
CN802 1.5mm L SMK
1 MIC 5V
2 MIC IN L
3 MIC GND
4 MIC IN R
STEREO
MIC
J801
EXT MIC
J802
DC OUT
AU-99
CN551 1mm L
ZIF
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN/OUT
6 AUDIO GND
7 AUDIO R IN/OUT
8 JACK IN/OUT
9 MONO/STEREO DET
10 JC MONO/STE DET
11 RF SWP
12 SP/LP
13 FADER CONT
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SYSTEM RESET
18 X2
19 SWR
20 N.C
21 LINE/CAM
22 SCK
23 RFU DC
24 A DATA
FP-261
W401 0.8mm
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN/OUT
6 AUDIO GND
7 AUDIO R IN/OUT
8 JACK IN/OUT
9 MONO/STEREO DET
10 JC MONO/STE DET
11 RF SWP
12 SP/LP
13 FADER CONT
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SYSTEM RESET
18 X2
19 SWR
20 N.C.
21 CAM/LIVE
22 SCK
23 RFU DC
24 A DATA
CN401 1.5mm L
1 JACK MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
CN402 L 1.5mm
1 HP L OUT
2 HP GND
3 HP R OUT

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Email:- enquiries@mauritron.co.uk

- ☐ :
- ▬ :
- Circlec
- ➩ :

Note:
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[SEMICON

In this ser
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shown below
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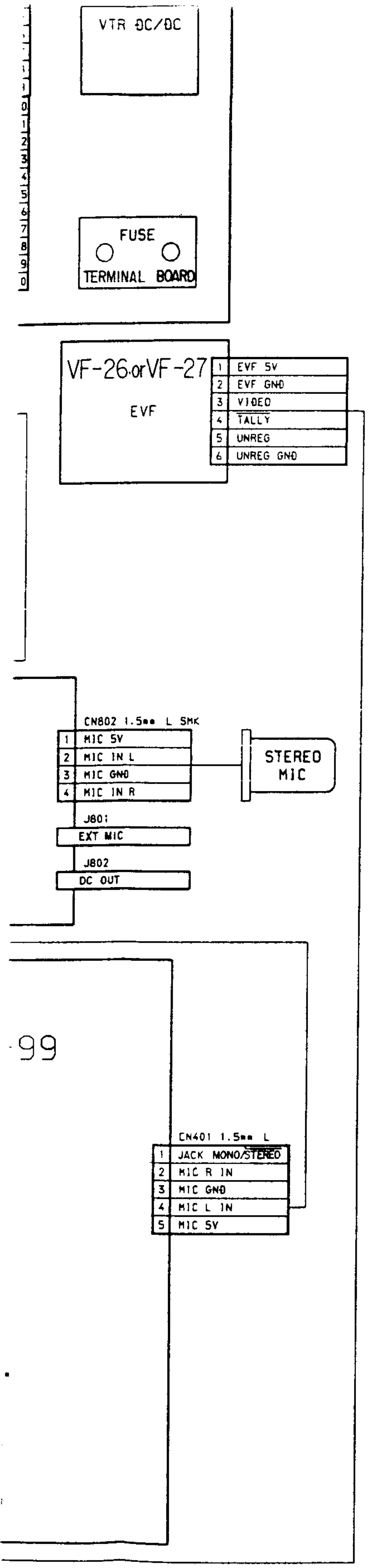

VTR DC/DC
FUSE
TERMINAL BOARD
VF-26 or VF-27
EVF
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
CN802 1.5mm L SMK
1 MIC 5V
2 MIC IN L
3 MIC GND
4 MIC IN R
STEREO MIC
J801
EXT MIC
J802
DC OUT
99
CN401 1.5mm L
1 JACK MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V

- ▭ : adjustment for repair. *
- ▬ : B + Line *
- Circled numbers refer to waveforms. *
- ⇨ : IN/OUT direction of B (+, –) line. *

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

* Indicated by the color red.

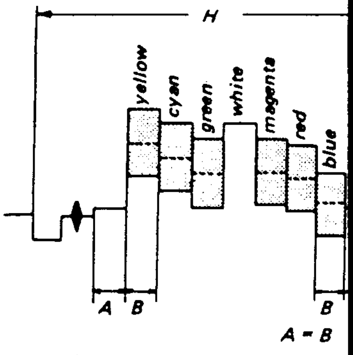

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A = B

Fig. a Video output waveform.

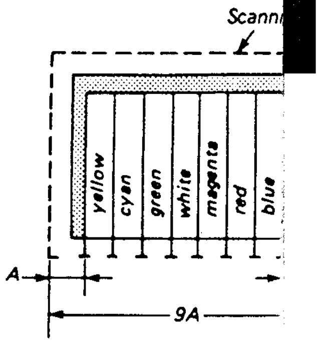
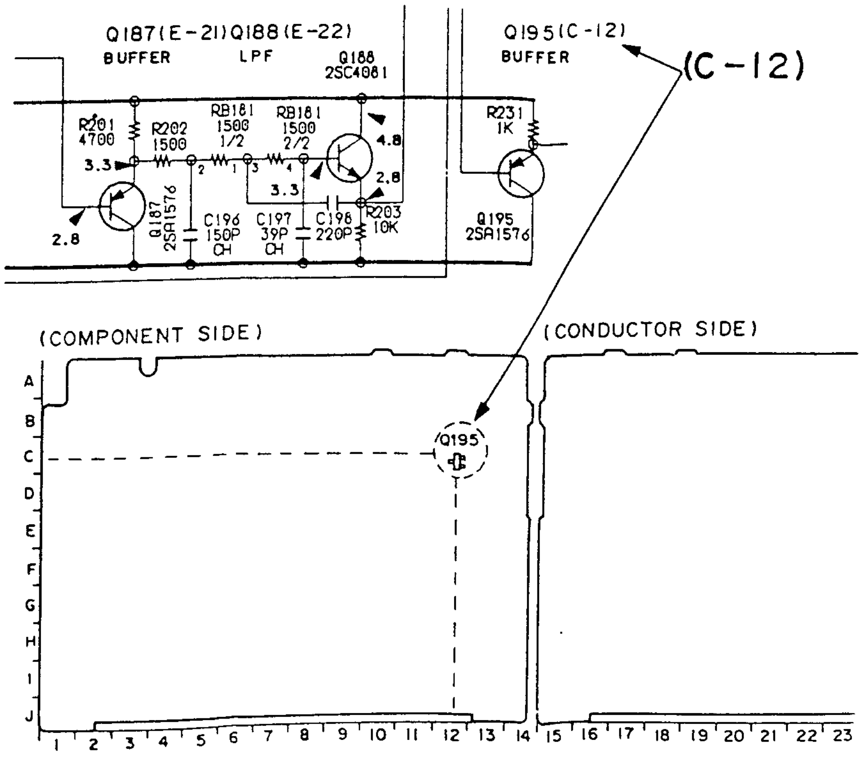

Scanni
yellow
cyan
green
white
magenta
red
blue
A
9A

Fig. b Picture of TV monitc

- **For voltage and waveforms. (REC/PE**
- Voltages are dc between ground and me
- Readings are taken with a color-bar sign
- Readings are taken with a digital multi
- Voltage variations may be noted d production tolerances. *

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red sa shown below. This enables to find the location on the board easily when servicing.


Q187(E-21)Q188(E-22)
BUFFER
LPF
Q188
2SC4081
Q195(C-12)
BUFFER
(C-12)
R201
4700
R202
1500
RB181
1500
1/2
RB181
1500
2/2
3.3
3.3
4.8
2.8
2.8
Q187
2SA1576
C196
150P
CH
C197
39P
CH
C198
220P
R203
10K
R231
1K
Q195
2SA1576
(COMPONENT SIDE)
(CONDUCTOR SIDE)
Q195
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
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23

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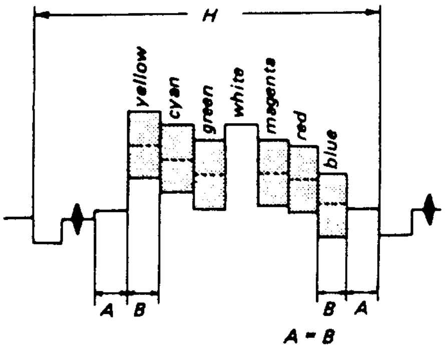

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Video output waveform.

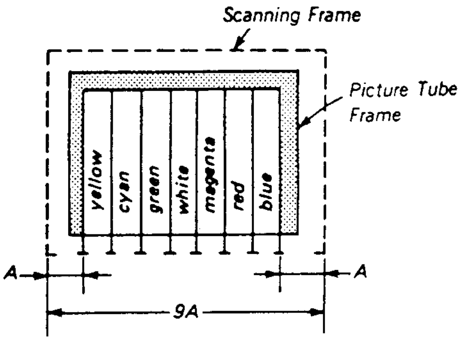

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

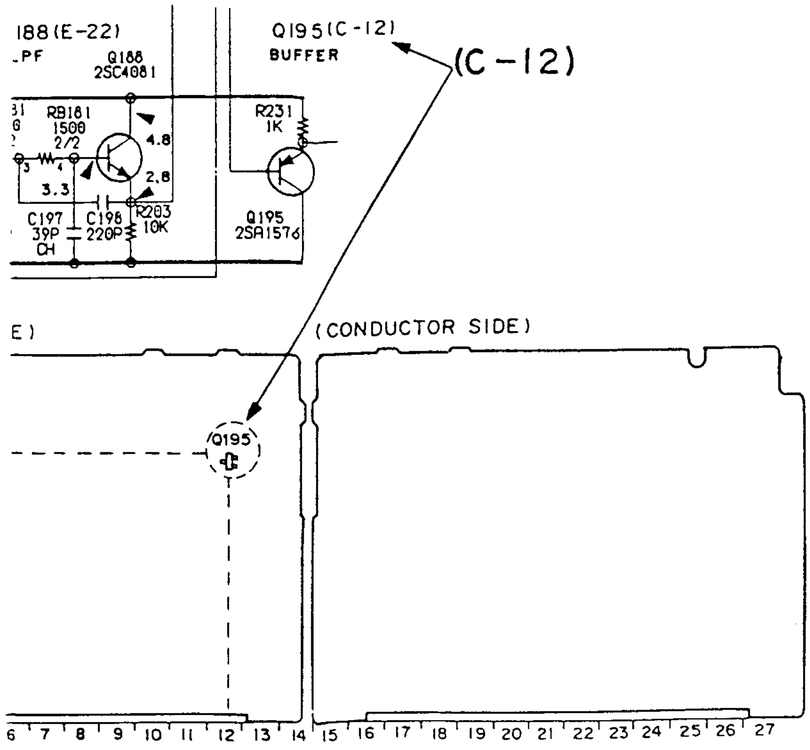
- **For voltage and waveforms. (REC / PB mode)**
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

the respective ICs from the old boards and install them to the new once respectively.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity.
  For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

.tions of the
ated in red sa
on the board

[Semiconductor for Correction List Display]
Part code and part name of the semiconductor for correction of the print board is described in the space of each print figure. Use this list when ordering parts.


188(E-22)
.PF
Q188
2SC4081
RB181
1500
2/2
4.8
2.8
3.3
C197
39P
CH
C198
220P
R203
10K
Q195(C-12)
BUFFER
R231
1K
Q195
2SA1576
(C-12)
E)
(CONDUCTOR SIDE)
Q195
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

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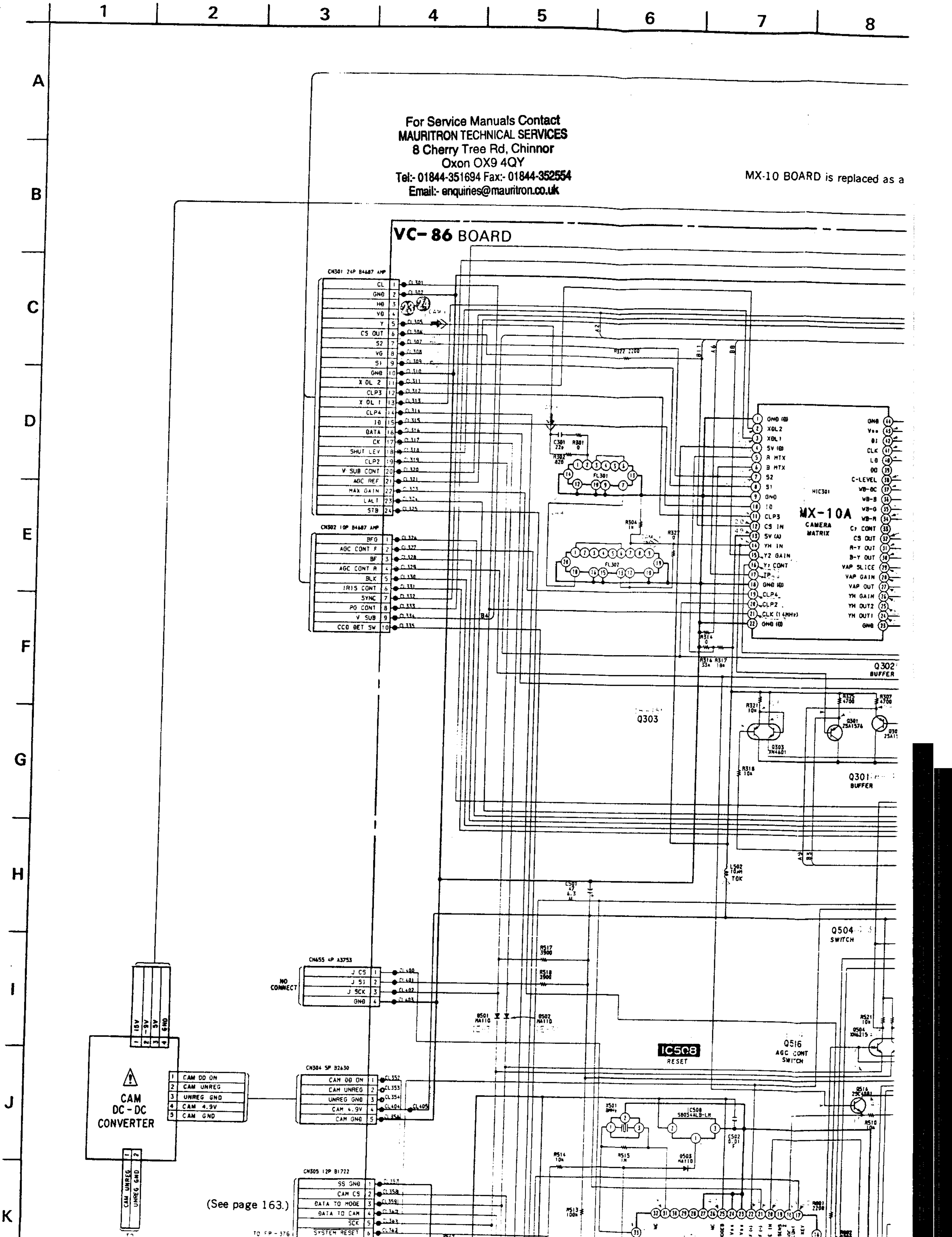
VC-86 (CAMERA PROCESS, ZOOM/FOCUS), CD-53 (CCD IMAGER) SCHEMATIC DIAGRAM

—Ref. No. VC-86, CD-53 BOARDS : 1000 series—



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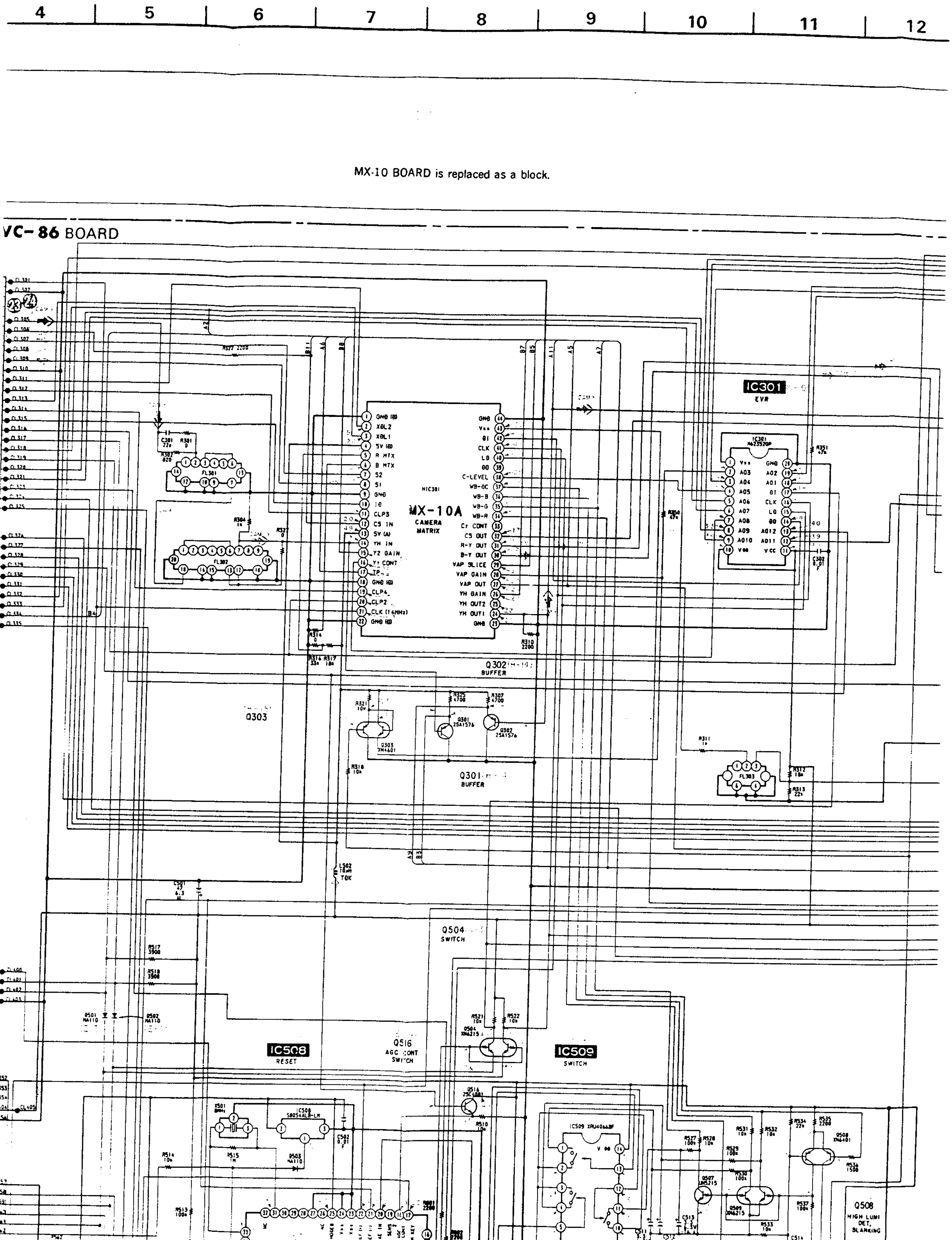
MX-10 BOARD is replaced as a

(See page 163.)

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
VC-86 BOARD
CN301 24P B4687 AMP
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
X OL 2
CLP3
X OL 1
CLP4
ID
DATA
CK
SHUT LEV
CLP2
V SUB CONT
AGC REF
MAX GAIN
LALT
STB
CN302 10P B4687 AMP
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
V SUB
CCD DET SW
R322 2200
C301 22p
R301 0
R302 820
FL301
FL307
R304 1k
IC301
MX-10A
CAMERA MATRIX
GND (D)
XOL2
XOL1
5V (D)
R MTX
B MTX
S2
S1
GND
ID
CLP3
CS IN
5V (A)
YH IN
Y2 GAIN
Y2 CONT
TP
GND (D)
CLP4
CLP2
CLK (14MHz)
GND (D)
GND
Vcc
DI
CLK
LD
DO
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
C? CONT
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
VAP GAIN
VAP OUT
YH GAIN
YH OUT2
YH OUT1
GND
R314 0
R316 33k
R317 18k
Q302
BUFFER
Q303
R321 10k
Q303 XN4601
R318 10k
R325 4700
R307 4700
Q301 2SA1576
Q301
BUFFER
L502 10uH TOK
C501 47 4.3
Q504
SWITCH
CN455 4P A3753
NO CONNECT
J CS
J SI
J SCK
GND
R517 3900
R518 3900
D501 MA110
D502 MA110
IC508
RESET
Q516
AGC CONT SWITCH
R521 10k
Q504 XN6215
Q516 2SC4081
R510 10k
CN304 5P B2630
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
CL405
X501 8MHz
IC508 S8054ALB-LM
C502 0.01
R514 10k
R515 1M
D503 MA110
R513 100k
R801 2200
15V
-9V
5V
GND
CAM DC-DC CONVERTER
CAM UNREG
UNREG GND
CN305 12P B1722
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
TO FP-376

(CCD IMAGER) SCHEMATIC DIAGRAM



MX-10 BOARD is replaced as a block.

4
5
6
7
8
9
10
11
12
VC-86 BOARD
IC301
EVR
IC301 M62352OP
Vss
A03
A04
A05
A06
A07
A08
A09
A010
Vdd
GND
A02
A01
01
CLK
LD
00
A012
A011
Vcc
HIC301
MX-10A
CAMERA MATRIX
GND
XOL2
XOL1
5V
R MTX
B MTX
S2
S1
GND
IB
CLP3
CS IN
5V
YH IN
Y2 GAIN
Y1 CONT
CLP4
CLP2
CLK (14MHz)
Vss
BI
CLK
LD
DO
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
Cr CONT
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
VAP GAIN
VAP OUT
YH GAIN
YH OUT2
YH OUT1
FL301
FL302
FL303
C301 22p
R301 0
R302 820
R304 1k
R327 0
R327 2200
R350 47k
R351 47k
C302 0.01 F
R310 2200
R314 0
R316 33k
R317 10k
Q302
BUFFER
Q301
BUFFER
Q303
R321 10k
R325 4700
R307 4700
Q301 2SA1576
Q302 2SA1576
Q303 XN4601
R318 10k
R311 1k
R312 18k
R313 22k
L502 10μH TDK
C501 47 6.3
Q504
SWITCH
R517 3900
R518 3900
D501 MA110
D502 MA110
IC508
RESET
Q516
AGC CONT SWITCH
IC509
SWITCH
R521 10k
R522 10k
Q504 XN6215
Q516 2SC4081
R510 10k
X501
IC508 S8054ALB-LN
C502 0.01 F
R514 10k
R515 1M
D503 MA110
R513 100k
IC509 XRU4066BF
V DD
R527 100k
R528 10k
R529 100k
R530 100k
R531 10k
R532 10k
R533 10k
R534 22k
R535 2200
R536 1500
R537 100k
Q507 UN5215
Q509 XN6215
Q508 XN6401
Q508
HIGH LUMI DET. BLANKING
C511 3.3
C512
C513 3.3 6.3V
C514
A2
B11
A6
B8
B7
B5
A11
A5
A7
A9
B3
B4
CL301
CL302
CL305
CL306
CL307
CL308
CL309
CL310
CL311
CL312
CL313
CL314
CL315
CL316
CL317
CL318
CL319
CL320
CL321
CL322
CL323
CL324
CL325
CL326
CL327
CL328
CL329
CL330
CL331
CL332
CL333
CL334
CL335
CL400
CL401
CL402
CL403
CL405
23
24

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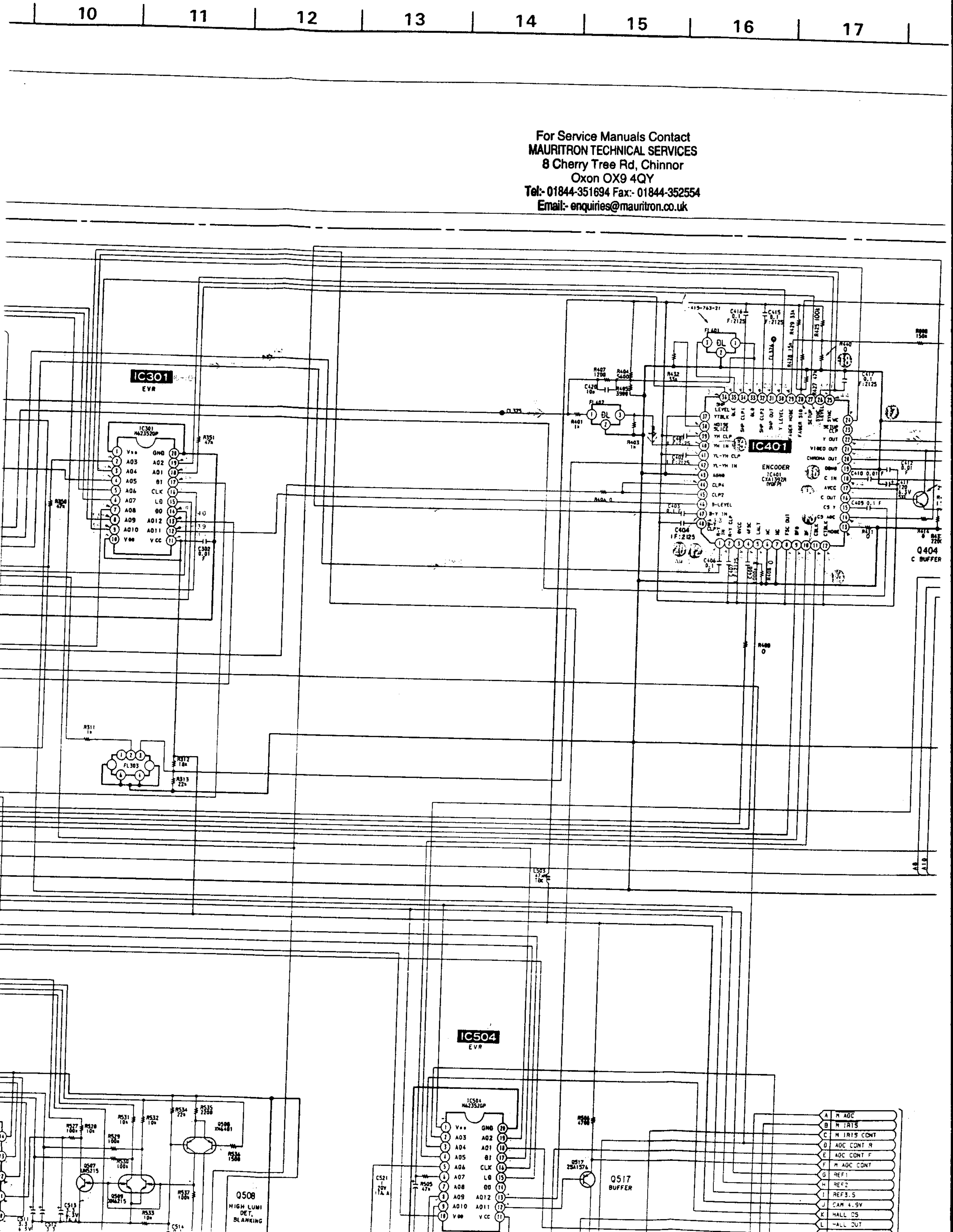
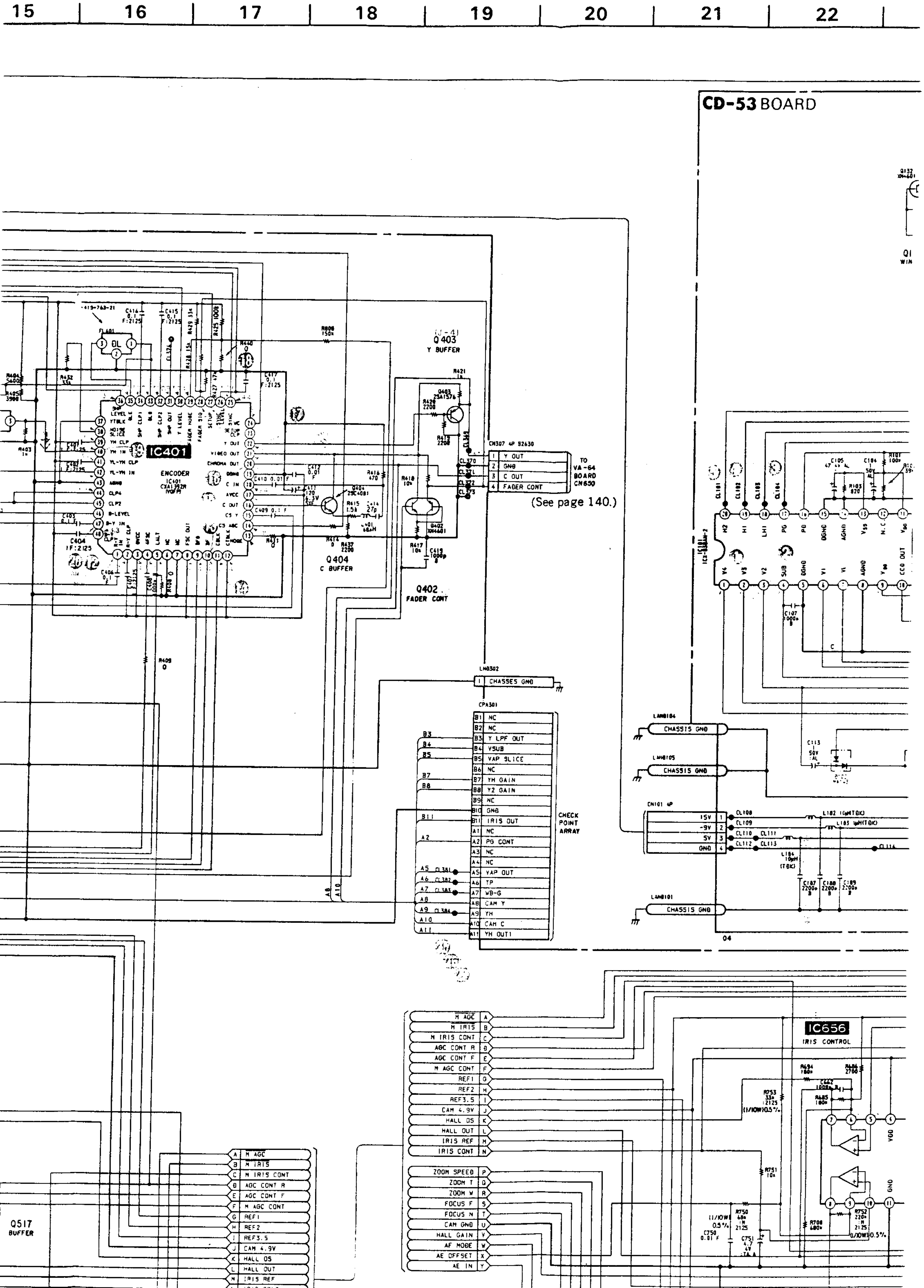
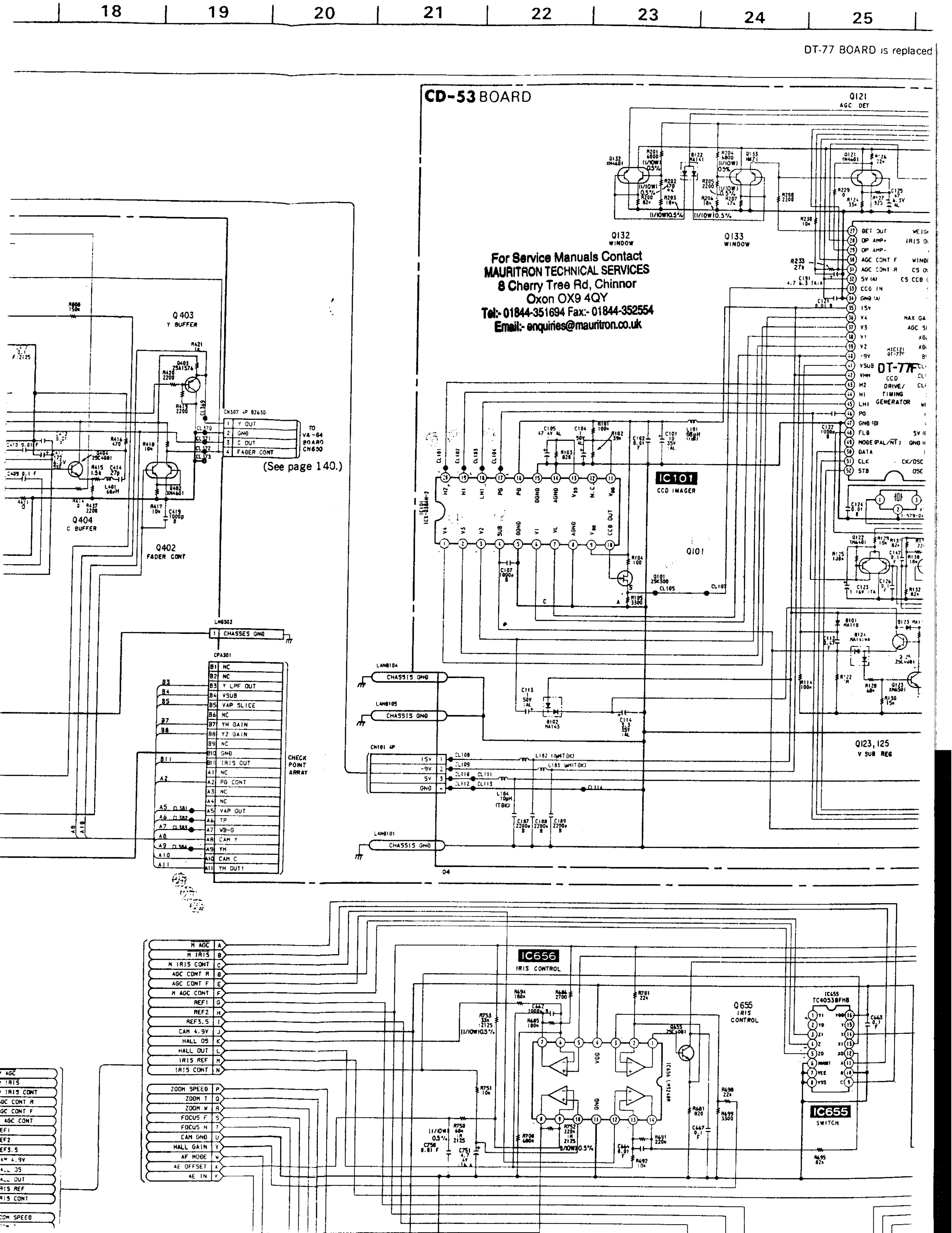

10
11
12
13
14
15
16
17
IC301
EVR
IC301
M62352GP
Vss
A03
A04
A05
A06
A07
A08
A09
A010
Vdd
GND
A02
A01
BI
CLK
LD
BO
A012
A011
VCC
R351 47k
R354 47k
C302 0.01 F
R311 1k
FL303
R312 10k
R313 22k
IC401
ENCODER
IC401
CXA1392R
(VQFP)
FL401
DL
FL402
DL
1-415-763-21
C416 0.1 F:2125
C415 0.1 F:2125
R429 33k
R425 100k
R428 15k
R427 47k
R440 0
C417 0.1 F:2125
R432 33k
R407 1200
R404 5600
R405 3900
C420 10u
R401 1k
R403 1k
CL375
CL374
C401 F:2125
C402 F:2125
C403 0.1 F
C404 1F:2125
C406 0.1 F
C407 F:2125
C408 1000p
R408 0
R409 0
R488 0
C410 0.01 F
C412 0.01 F
C411 120 6.3V
C409 0.1 F
R411 0
R414
R415 220k
R808 150k
SHP LEVEL
YTBLK
NOISE SLICE
YH CLP
YH IN
YL-YH CLP
YL-YH IN
AGND
CLP4
CLP2
B-LEVEL
B-Y IN
R-Y CLP
R-Y IN
DVCC
4FSC
LALT
NC
FSC OUT
BFO
CBLK
CTBLK
CMODE
CS ADC
CS Y
C OUT
AVCC
C IN
DGND
CHROMA OUT
VIDEO OUT
Y OUT
SETUP CLP
SYNC
SYNC LEVEL
SETUP
FADER SIO
FADER MODE
Y LEVEL
SHP OUT
BLO
SHP CLP1
BLE
SHP CLP2
Q404
C BUFFER
L503 47uH 10k
A8
A10
IC504
EVR
IC504
M62352GP
R531 10k
R532 10k
R534 22k
R535 2200
R527 100k
R528 10k
R529 100k
R530 100k
Q507 UN5215
Q509 XN6215
Q508 XN4401
R536 1500
R537 100k
R533 10k
C511 3.3 6.3V
C512 3.3
C513 3.3 6.3V
C514
Q508
HIGH LUMI DET, BLANKING
C521 20V
R505 47k
R544 4700
Q517 2SA1576
Q517
BUFFER
A
B
C
D
E
F
G
H
I
J
K
L
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
REF1
REF2
REF3.5
CAM 4.9V
HALL DS
HALL OUT


15
16
17
18
19
20
21
22
CD-53 BOARD
IC401
ENCODER
IC401
CXA1392R
Q403
Y BUFFER
Q404
C BUFFER
Q402
FADER CONT
CN307 4P
Y OUT
GND
C OUT
FADER CONT
TO
VA-64
BOARD
CN650
(See page 140.)
LN0302
CHASSES GND
CPA301
NC
NC
Y LPF OUT
VSUB
VAP SLICE
NC
YH GAIN
Y2 GAIN
NC
GND
IRIS OUT
NC
PG CONT
NC
NC
VAP OUT
TP
WB-G
CAM Y
YH
CAM C
YH OUT1
CHECK
POINT
ARRAY
CHASSIS GND
CHASSIS GND
CHASSIS GND
CN101 4P
15V
-9V
5V
GND
IC656
IRIS CONTROL
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS F
FOCUS N
CAM GND
HALL GAIN
AF MODE
AE OFFSET
AE IN
Q517
BUFFER

DT-77 BOARD is replaced


18
19
20
21
22
23
24
25
CD-53 BOARD
Q121 AGC DET
Q132 WINDOW
Q133 WINDOW
Q403 Y BUFFER
Q404 C BUFFER
Q402 FADER CONT
CN307 4P
Y OUT
GND
C OUT
FADER CONT
TO VA-64 BOARD CN650
(See page 140.)
IC101 CCD IMAGER
Q101
DT-77F CCD DRIVE/ TIMING GENERATOR
BET OUT
OP AMP+
OP AMP-
AGC CONT F
AGC CONT R
5V (A)
CCD IN
GND (A)
15V
V4
V3
V1
V2
-9V
VSUB
VHH
H2
H1
LH1
PG
GND (B)
FLB
MODE (PAL/NT)
DATA
CLK
STB
Q123,125 V SUB REG
LM0302
CHASSIS GND
CPA301
NC
Y LPF OUT
VSUB
VAP SLICE
YH GAIN
Y2 GAIN
GND
IRIS OUT
PG CONT
VAP OUT
TP
WB-G
CAM Y
YH
CAM C
YH OUT1
CHECK POINT ARRAY
CN101 4P
15V
-9V
5V
GND
CHASSIS GND
IC656 IRIS CONTROL
Q655 IRIS CONTROL
IC655 TC4053BFN
IC655 SWITCH
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS F
FOCUS N
CAM GND
HALL GAIN
AF MODE
AE OFFSET
AE IN

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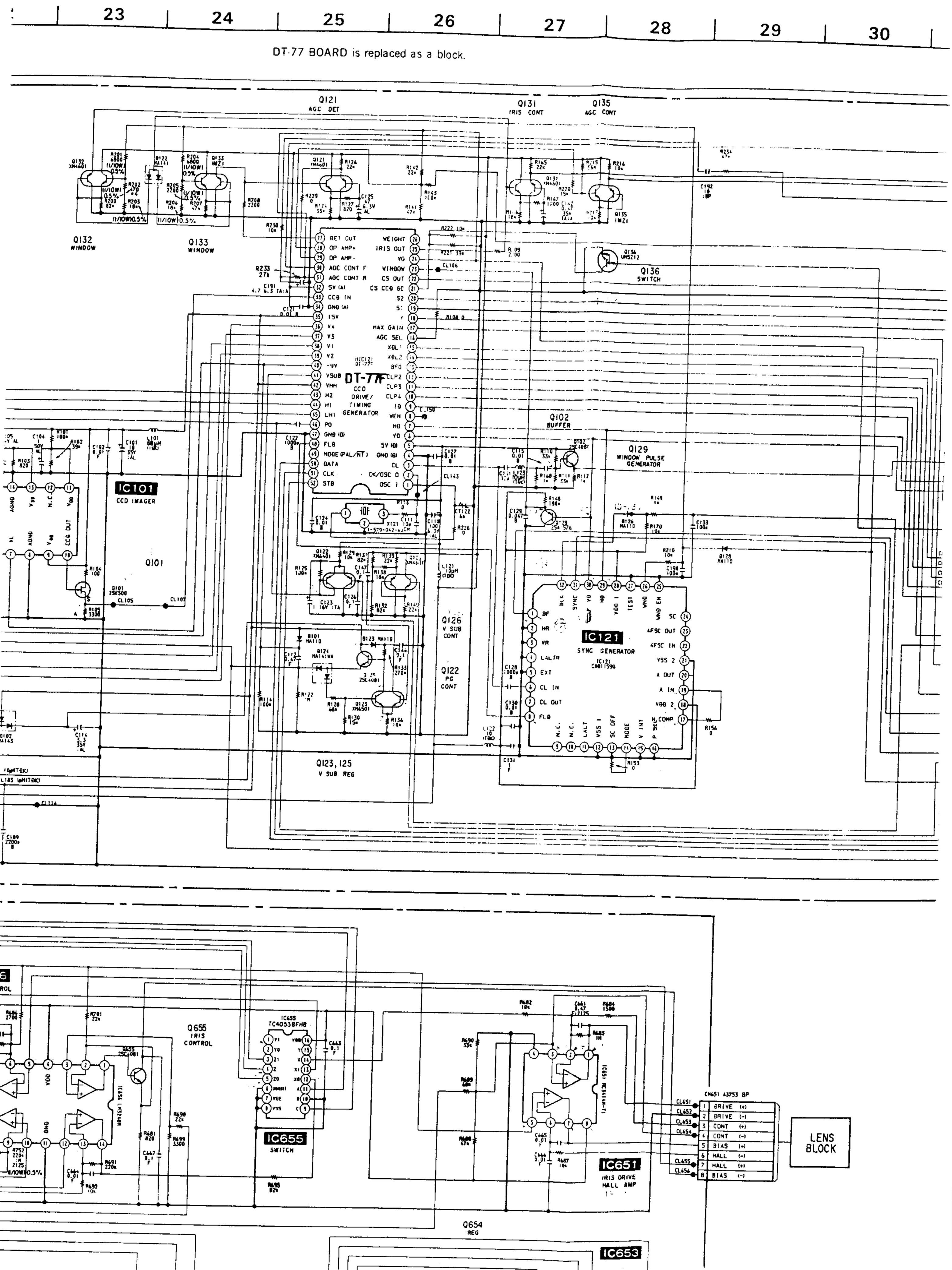
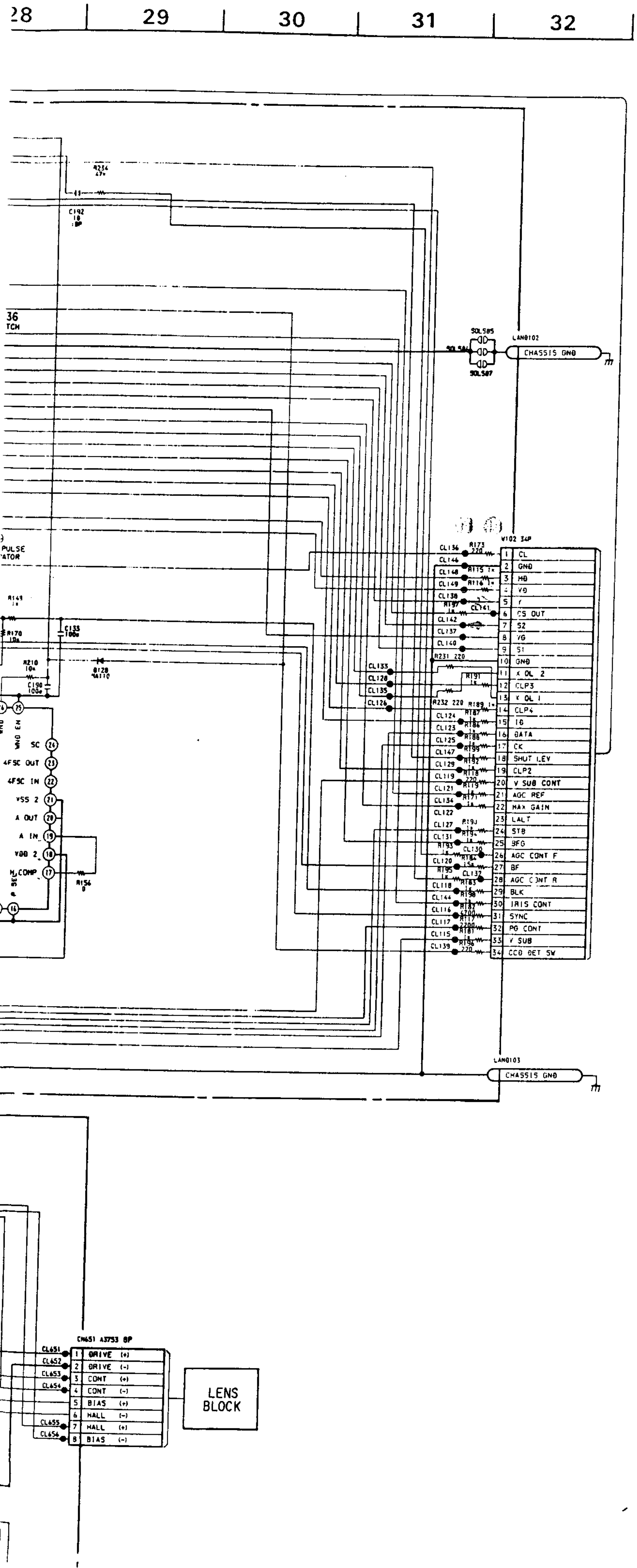
DT-77 BOARD is replaced as a block.


23
24
25
26
27
28
29
30
Q121 AGC DET
Q131 IRIS CONT
Q135 AGC CONT
Q132 WINDOW
Q133 WINDOW
Q136 SWITCH
IC121 DT-77F
CCD DRIVE/ TIMING GENERATOR
DET OUT
OP AMP+
OP AMP-
AGC CONT F
AGC CONT R
5V (A)
CCD IN
GND (A)
15V
V4
V3
V1
V2
-9V
VSUB
VHH
H2
H1
LH1
PG
GND (D)
FLD
MODE (PAL/NT)
DATA
CLK
STB
WEIGHT
IRIS OUT
VG
WINDOW
CS OUT
CS CCD GC
S2
S1
MAX GAIN
AGC SEL
XBL
CLP2
CLP3
CLP4
ID
WEN
HD
VD
5V (D)
GND (D)
CL
CK/OSC O
OSC I
IC101 CCD IMAGER
Q101
Q102 BUFFER
Q129 WINDOW PULSE GENERATOR
IC121 SYNC GENERATOR
IC121 CX811590
BF
HR
VR
LALTR
EXT
CL IN
CL OUT
FLD
SC
4FSC OUT
4FSC IN
VSS 2
A OUT
A IN
VDD 2
H.COMP
Q126 V SUB CONT
Q122 PG CONT
Q123, 125 V SUB REG
Q655 IRIS CONTROL
IC655 TC4053BFHB
IC655 SWITCH
IC651 IRIS DRIVE HALL AMP
Q654 REG
IC653
CN651 A3753 8P
1 DRIVE (+)
2 DRIVE (-)
3 CONT (+)
4 CONT (-)
5 BIAS (+)
6 HALL (-)
7 HALL (+)
8 BIAS (-)
LENS BLOCK


28
29
30
31
32
R234 47k
C192 10 10P
36 TCH
PULSE ATOR
SOL585
SOL584
SOL587
LAN0102
CHASSIS GND
V102 34P
CL136 R173 220
CL146
CL148 R115 1k
CL149 R116 1k
CL138
R197 1k
CL141
CL142
CL137
CL140
R231 220
R191 1k
R232 220
R189 1k
CL133
CL128
CL135
CL126
CL124 R187 1k
CL123 R186 1k
CL125 R188 1k
CL147 R199 1k
CL129 R192 1k
CL119 R118 220
CL121 R119 1k
CL134 R171 1k
CL122
CL127 R193 1k
CL131 R194 1k
R193 1k CL130
CL120 R184 15k
R195 1k CL132
CL118 R183 1k
CL144 R198
CL116 R182 4700
CL117 R117 2200
CL115 R181 1k
CL139 R196 220
1 CL
2 GND
3 HD
4 VD
5 r
6 CS OUT
7 S2
8 VG
9 S1
10 GND
11 X OL 2
12 CLP3
13 X OL 1
14 CLP4
15 ID
16 DATA
17 CK
18 SHUT LEV
19 CLP2
20 V SUB CONT
21 AGC REF
22 MAX GAIN
23 LALT
24 STB
25 BFG
26 AGC CONT F
27 BF
28 AGC CONT R
29 BLK
30 IRIS CONT
31 SYNC
32 PG CONT
33 V SUB
34 CCD DET SW
R149 1k
R170 10k
C133 100u
R210 10k
C190 100u
D128 MA110
SC 24
4FSC OUT 23
4FSC IN 22
VSS 2 21
A OUT 20
A IN 19
VDD 2 18
H COMP 17
R156 0
16
25
LAN0103
CHASSIS GND
CN651 A3753 8P
CL651 1 DRIVE (+)
CL652 2 DRIVE (-)
CL653 3 CONT (+)
CL654 4 CONT (-)
5 BIAS (+)
6 HALL (-)
CL655 7 HALL (+)
CL656 8 BIAS (-)
LENS BLOCK

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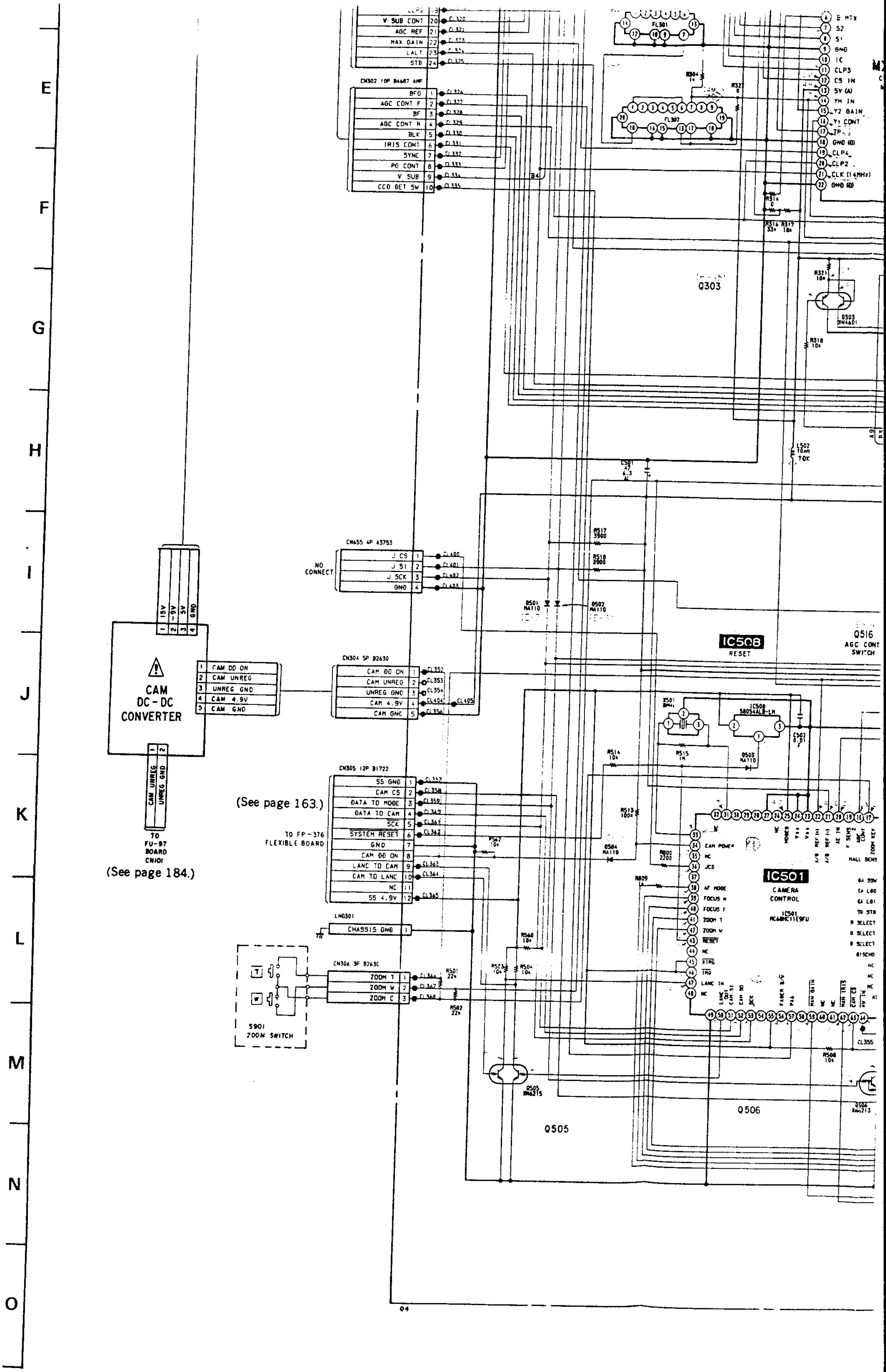
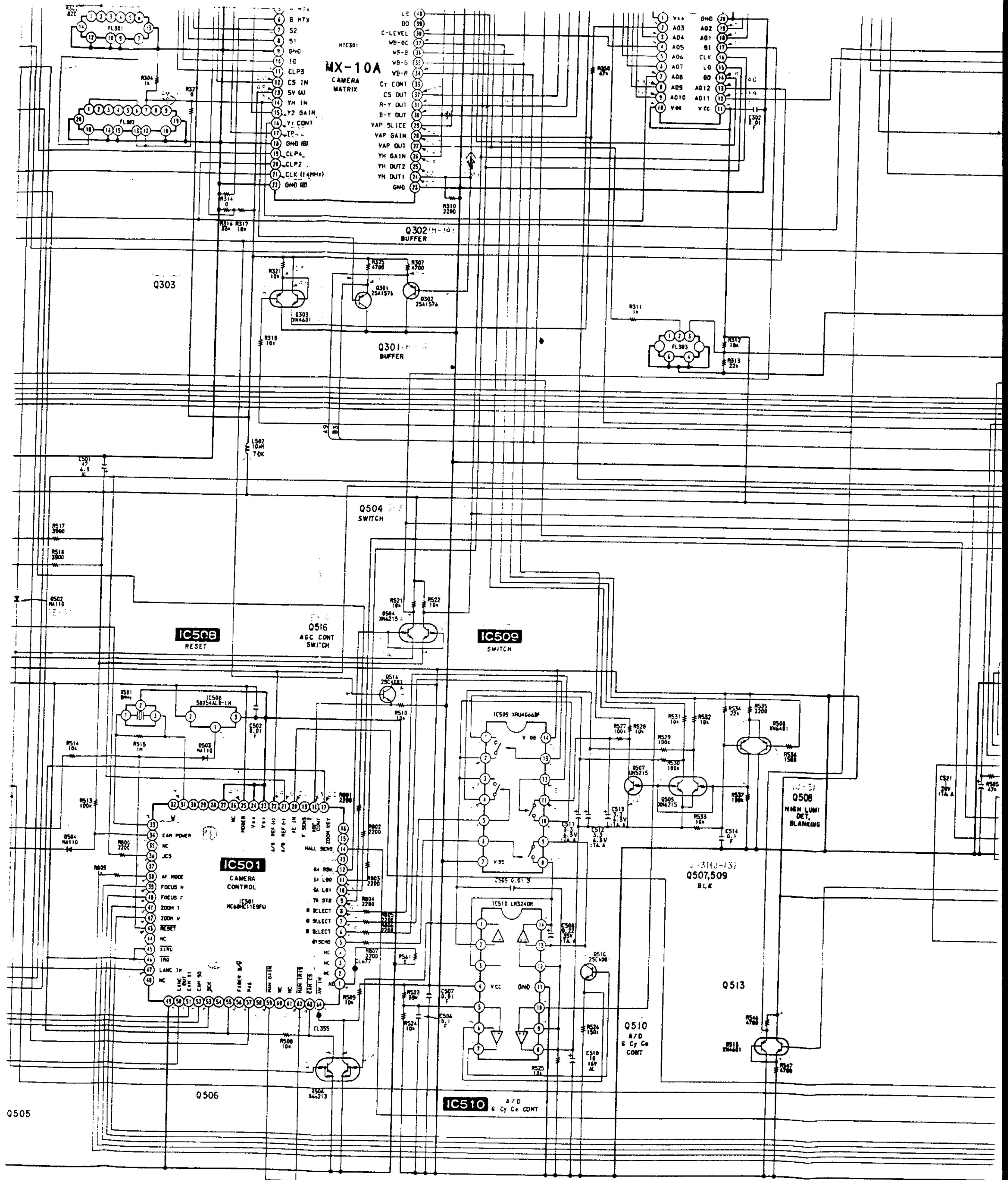

E
F
G
H
I
J
K
L
M
N
O
V SUB CONT 20
AGC REF 21
MAX GAIN 22
LALT 23
STB 24
CN302 10P B4687 AMP
BFG 1
AGC CONT F 2
BF 3
AGC CONT R 4
BLK 5
IRIS CONT 6
SYNC 7
PG CONT 8
V SUB 9
CCD DET SW 10
FL301
FL302
R304
R327
R314
R316 33k
R317 18k
R321 10k
R318 10k
Q303
Q303 DN4601
B MTX
S2
S1
GND
IC
CLP3
CS IN
5V (A)
YH IN
Y2 GAIN
Y2 CONT
TP
GND (D)
CLP4
CLP2
CLK (14MHz)
GND (D)
L502 10μH TDK
C501 47 6.3
CN655 4P A3753
NO CONNECT
J CS 1
J SI 2
J SCK 3
GND 4
R517 3900
R518 3900
D501 MA110
D502 MA110
15V
-9V
5V
GND
CAM DC-DC CONVERTER
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
CAM UNREG
UNREG GND
TO FU-97 BOARD CN101
(See page 184.)
CN304 5P B2630
CAM DD ON 1
CAM UNREG 2
UNREG GND 3
CAM 4.9V 4
CAM GND 5
CL405
IC508 RESET
Q516 AGC CONT SWITCH
X501 8MHz
IC508 S8054ALB-LM
C502 0.01
R514 10k
R515 1k
D503 MA110
CN305 12P B1722
(See page 163.)
TO FP-376 FLEXIBLE BOARD
5S GND 1
CAM CS 2
DATA TO MODE 3
DATA TO CAM 4
SCK 5
SYSTEM RESET 6
GND 7
CAM DD ON 8
LANC TO CAM 9
CAM TO LANC 10
NC 11
5S 4.9V 12
R562 10k
R513 100k
D504 MA110
R800 220
R809
IC501 CAMERA CONTROL
IC501 MC68HC11E9FU
CAM POWER
JCS
AF MODE
FOCUS N
FOCUS F
ZOOM T
ZOOM W
RESET
XIRQ
TRQ
LANC IN
HALL SENS
LN0301
CHASSIS GND 1
CN306 3P B2630
ZOOM T 1
ZOOM W 2
ZOOM C 3
R501 22k
R502 22k
R540 10k
R503 10k
R504 10k
S901 ZOOM SWITCH
T
W
Q505 XN4215
Q505
Q506
R508 10k
Q506 XN4213
CL355
04


MX-10A
CAMERA MATRIX
HIC301
FL301
FL302
FL303
Q302
BUFFER
Q303
Q301
BUFFER
Q504
SWITCH
IC508
RESET
Q516
AGC CONT SWITCH
IC509
SWITCH
IC509 XRU4066BF
IC501
CAMERA CONTROL
IC501 MC68HC11E9FU
IC510 LM324DR
Q508
HIGH LUMI DET, BLANKING
Q507,509
BLK
Q510
A/D 6 Cy Ce CONT
Q513
Q506
Q505
IC510
A/D 6 Cy Ce CONT
X501 8MHz
IC508 S8054ALB-LH
B MTX
S2
S1
GND
10
CLP3
CS IN
5V (A)
YH IN
Y2 GAIN
Y1 CONT
TP
GND (D)
CLP4
CLP2
CLK (14MHz)
GND (D)
LC
DO
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
Cr CONT
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
VAP GAIN
VAP OUT
YH GAIN
YH OUT2
YH OUT1
GND
Vss
A03
A04
A05
A06
A07
A08
A09
A010
Vdd
A02
A01
BI
CLK
LD
DO
A012
A011
VCC
CAM POWER
NC
JCS
AF MODE
FOCUS N
FOCUS F
ZOOM T
ZOOM W
RESET
XIRQ
IRQ
LANC IN
HALL SENS
ZOOM KEY
TD STB
R SELECT
G SELECT
B SELECT
CAM 51
CAM 50
FADER
V DD
V SS
GND
C302 0.01
C501 47 6.3
C505 0.01
C507 0.01
C508 0.22 35V
C510 10 16V
C511 3.3 6.3V
C512 3.3 6.3V
C513 3.3 6.3V
C514 0.1
C521
L502 10uH TDK
Q301 2SA1576
Q302 2SA1576
Q303 XN4601
Q504 XN4215
Q505 XN6215
Q506 XN6213
Q507 UN5215
Q508 XN6401
Q510 2SC4081
Q513 XN4601
Q516 2SC4081
D502 MA110
D503 MA110
D504 MA110
R304
R310 2200
R311
R312 18k
R313 22k
R314 0
R316 33k
R317 18k
R318 10k
R321 10k
R325 4700
R327 0
R350 47k
R307 4700
R505 47k
R508 10k
R509 10k
R510 10k
R513 100k
R514 10k
R515 1M
R517 3900
R518 3900
R521 10k
R522 10k
R523 39k
R524 10k
R525 10k
R526 150k
R527 100k
R528 10k
R529 100k
R530 100k
R531 10k
R532 10k
R533 10k
R534 22k
R535 2200
R536 1500
R537 180k
R544 4700
R547 4700
R561
R800 2200
R801 2200
R802 2200
R803 2200
R804 2200
R805
R806 2200
R807 2200
CL355
CL677

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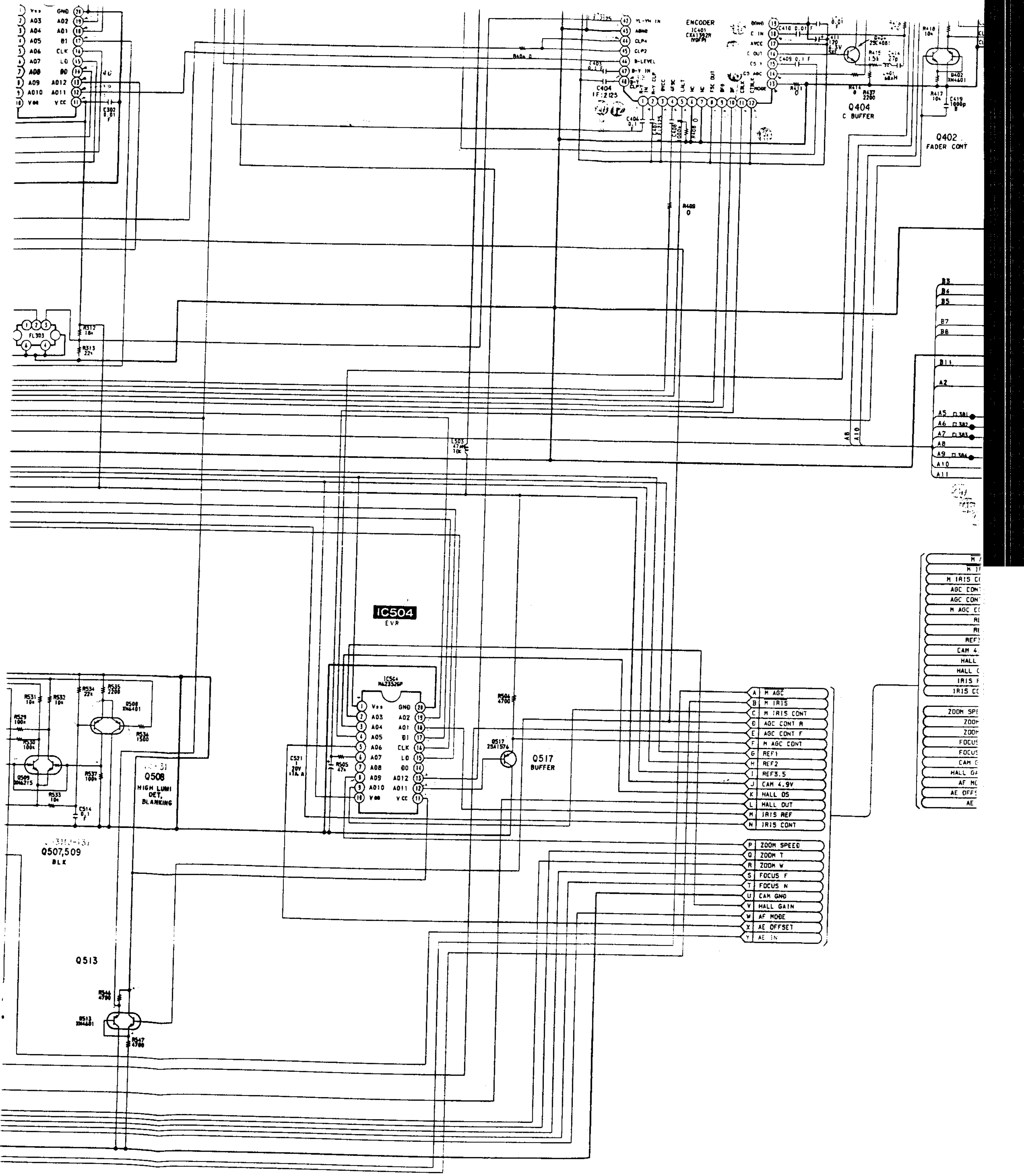
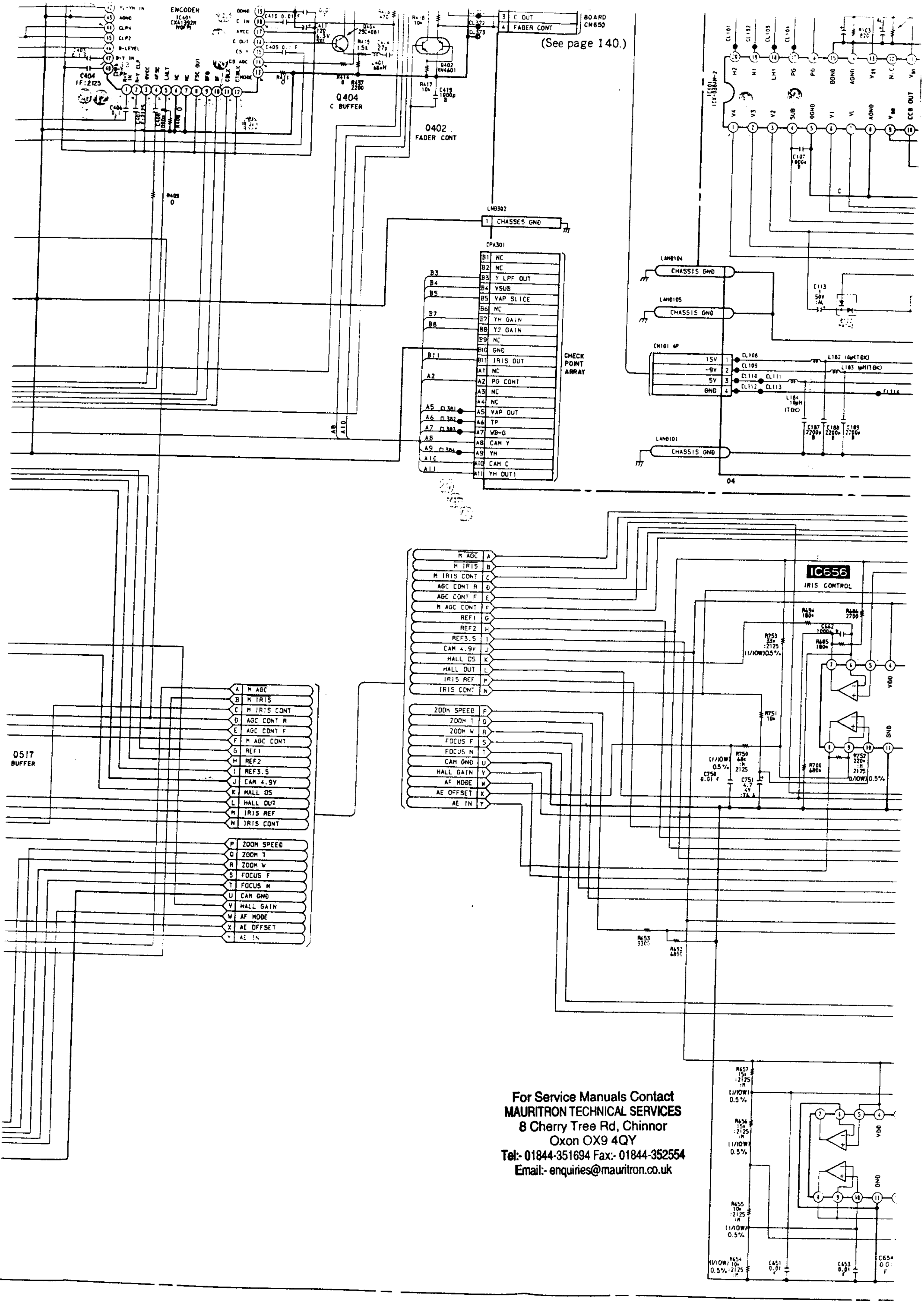

ENCODER
IC401
CXA1392R
YL-YH IN
ABNE
CLP4
CLP2
B-LEVEL
B-Y IN
C IN
AVCC
C OUT
CS Y
CS AGC
C MODE
C404
C406
C408
R408 0
R409
0
Q404
C BUFFER
Q402
FADER CONT
R418
10k
R417
10k
C419
1000p
R414
R437
2200
R415
1.5k
L401
68μH
C409 0.1 F
C410 0.01 F
IC504
EVR
IC504
M62352GP
Vss
A03
A04
A05
A06
A07
A08
A09
A010
VDD
GND
A02
A01
BI
CLK
LO
BO
A012
A011
VCC
C521
R505
47k
R506
4700
Q517
2SA1576
Q517
BUFFER
L503
47μH
FL303
R312
18k
R313
22k
C302
0.01
F
R531
10k
R532
10k
R534
22k
R535
2200
R529
100k
R530
100k
R536
1500
R537
100k
R533
10k
C514
0.1
F
Q508
XN4601
Q509
XN4215
Q508
HIGH LUMI
DET,
BLANKING
Q507,509
BLK
Q513
R546
4700
Q513
XN4601
R547
4700
A
M AGC
B
M IRIS
C
M IRIS CONT
D
AGC CONT R
E
AGC CONT F
F
M AGC CONT
G
REF1
H
REF2
I
REF3.5
J
CAM 4.9V
K
HALL OS
L
HALL OUT
M
IRIS REF
N
IRIS CONT
P
ZOOM SPEED
Q
ZOOM T
R
ZOOM W
S
FOCUS F
T
FOCUS N
U
CAM GND
V
HALL GAIN
W
AF MODE
X
AE OFFSET
Y
AE IN
B3
B4
B5
B7
B6
B11
A2
A5
A6
A7
A8
A9
A10
A11
A8
A10
M IRIS C
AGC CONT
AGC CONT
M AGC C
REF3
CAM 4.
HALL
IRIS
IRIS C
ZOOM SPE
ZOOM
ZOOM
FOCUS
FOCUS
CAM G
HALL GA
AF MO
AE OFFS
AE


ENCODER
IC401
CXA1392R
(See page 140.)
BOARD
CN650
C OUT
FADER CONT
Q404
C BUFFER
Q402
FADER CONT
R409
0
LN0302
CHASSES GND
CPA301
B1 NC
B2 NC
B3 Y LPF OUT
B4 VSUB
B5 VAP SLICE
B6 NC
B7 YH GAIN
B8 Y2 GAIN
B9 NC
B10 GND
B11 IRIS OUT
A1 NC
A2 PG CONT
A3 NC
A4 NC
A5 VAP OUT
A6 TP
A7 WB-G
A8 CAM Y
A9 YH
A10 CAM C
A11 YH OUT1
CHECK POINT ARRAY
LAN8104
CHASSIS GND
LAN8105
CHASSIS GND
CN101 4P
15V
-9V
5V
GND
LAN8101
CHASSIS GND
IC101
H2
H1
LH1
PG
PD
OGND
AGND
VSS
N.C.
V4
V3
V2
SUB
OGND
V1
AGND
CC0 OUT
Q517
BUFFER
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS F
FOCUS N
CAM GND
HALL GAIN
AF MODE
AE OFFSET
AE IN
IC656
IRIS CONTROL
VDD
GND
R653
330
R657
15k
R656
15k
R655
10k
R654
10k
C651
0.01
C653
0.01
C654
0.01
(1/10W) 0.5%

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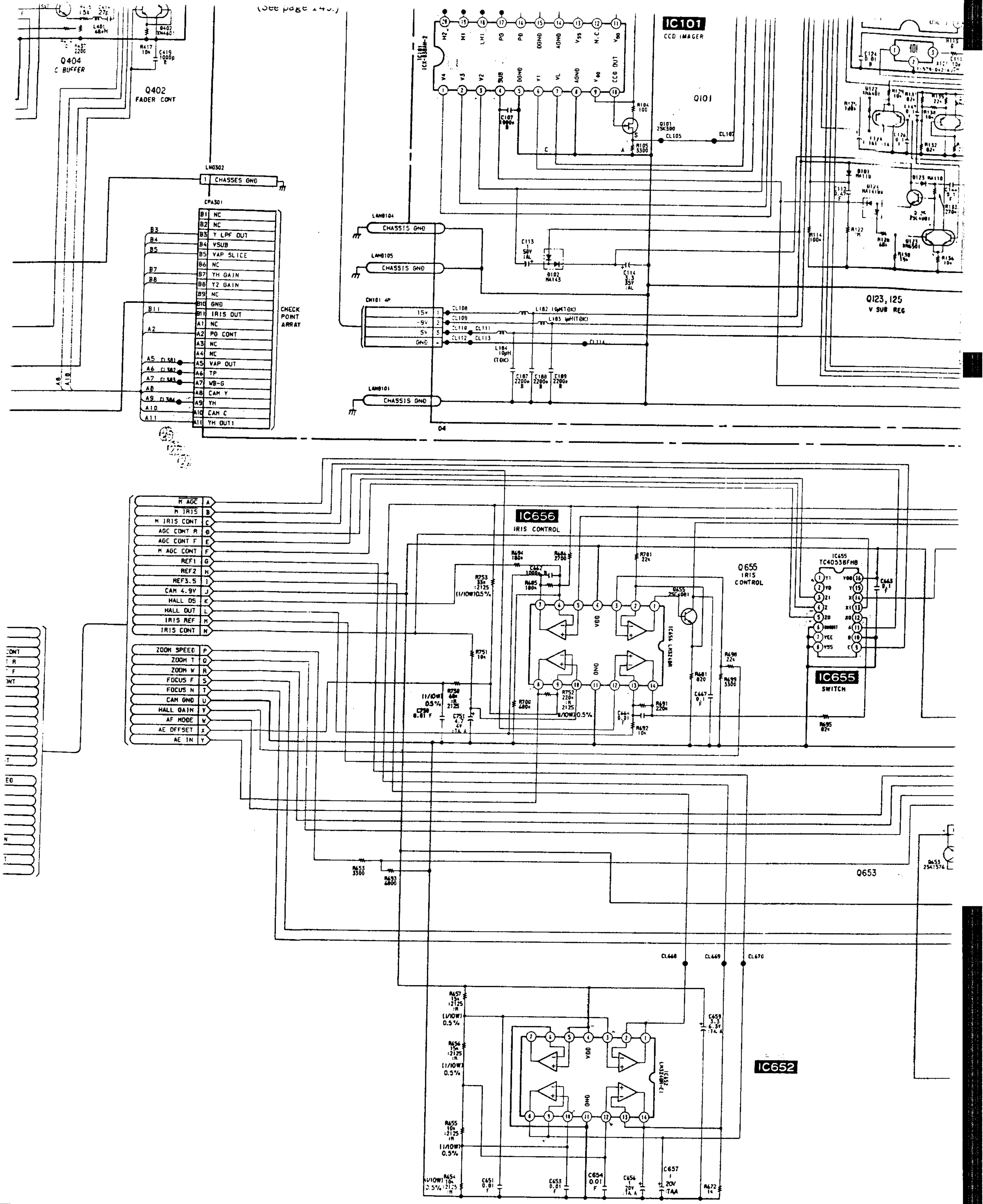
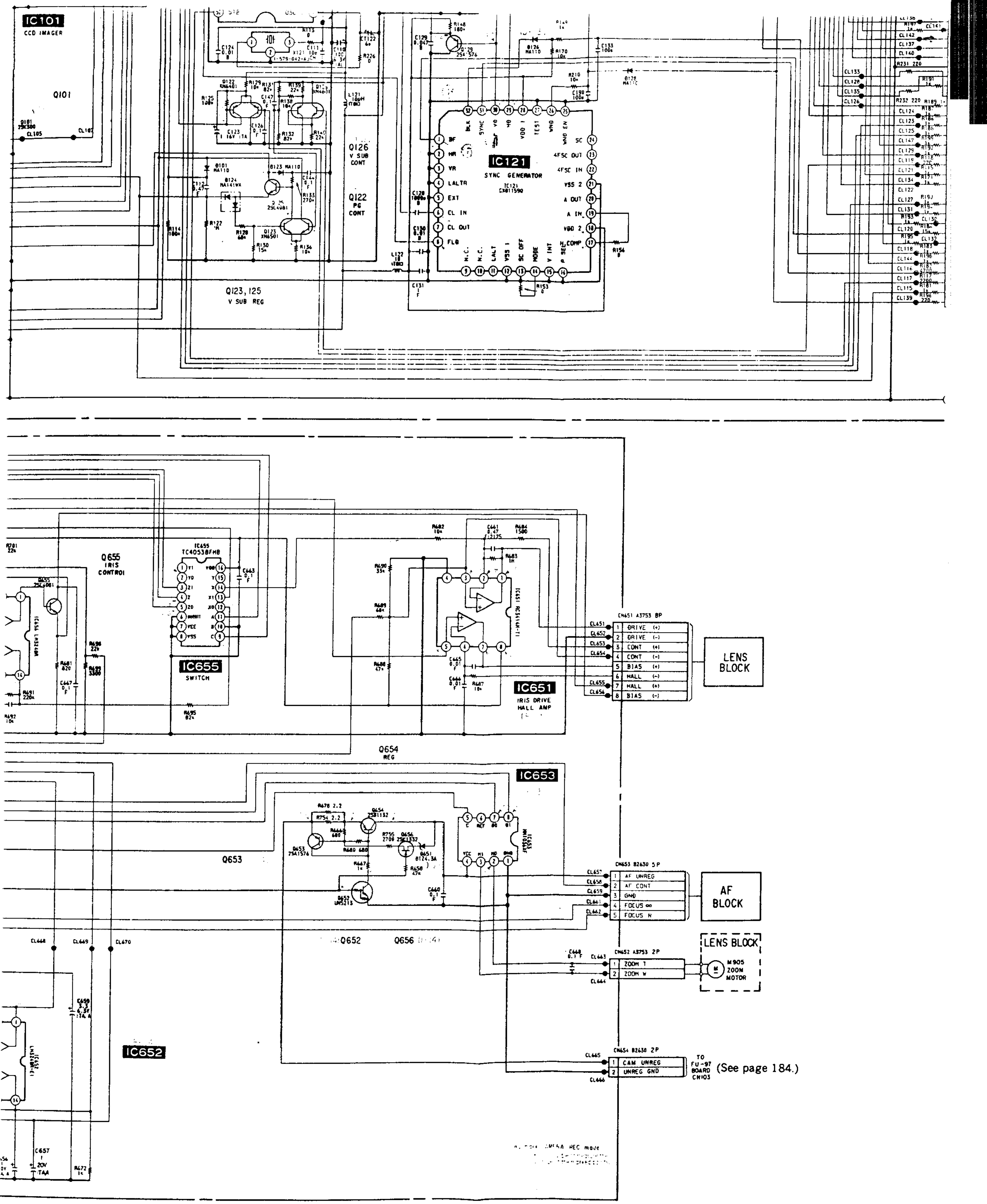
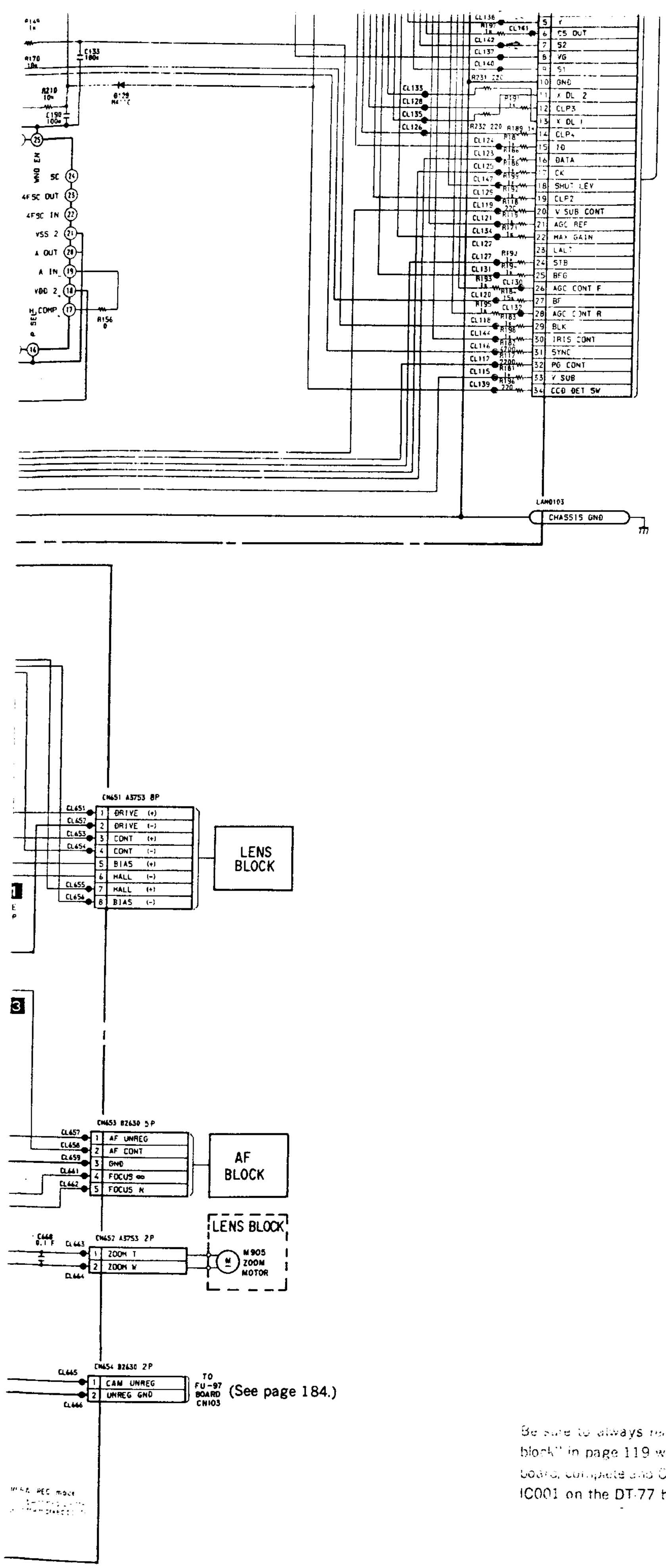

(See page 145.)
IC101
CCD IMAGER
IC101 ICX-038AM-2
H2, H1, LH1, PG, PD, OGND, AGND, Vss, N.C., VDD
V4, V3, V2, SUB, DGND, V1, VL, AGND, VDD, CCD OUT
Q101
Q101 2SK300
R104 100
R105 3300
C107 1000p
CL105
CL107
Q404 C BUFFER
Q402 FADER CONT
R417 10k
C419 1000p
L401 68μH
LM0302
CHASSES GND
CPA301
B1 NC
B2 NC
B3 Y LPF OUT
B4 VSUB
B5 VAP SLICE
B6 NC
B7 YH GAIN
B8 Y2 GAIN
B9 NC
B10 GND
B11 IRIS OUT
A1 NC
A2 PG CONT
A3 NC
A4 NC
A5 VAP OUT
A6 TP
A7 WB-G
A8 CAM Y
A9 YH
A10 CAM C
A11 YH OUT1
CHECK POINT ARRAY
CL381
CL382
CL383
CL384
LAN8104
LAN8105
LAN8101
CHASSIS GND
CN101 4P
15V
-9V
5V
GND
CL108
CL109
CL110
CL111
CL112
CL113
CL114
L182 10μH(TDK)
L183 10μH(TDK)
L184 10μH (TDK)
C187 2200p
C188 2200p
C189 2200p
C113 1 50V
D102 MA143
C114 3.3 35V
D101 MA110
Q123, 125
V SUB REG
Q123 MA110
R114 100k
R122
R130 15k
R134 10k
04
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS F
FOCUS N
CAM GND
HALL GAIN
AF MODE
AE OFFSET
AE IN
IC656
IRIS CONTROL
IC656 LM324M
VDD
GND
Q655 2SC4081
Q655 IRIS CONTROL
R494 180k
R484 2700
C642 1000p
R485 180k
R701 22k
R753 33k :2125 (1/10W) 0.5%
R751 10k
R750 68k 2125 (1/10W) 0.5%
C750 0.01 F
C751 4.7 4V
R700 680k
R752 220k 2125 (1/10W) 0.5%
C644 0.01 F
R691 220k
R692 10k
R681 820
C647 0.1 F
R498 22k
R499 3300
IC655 TC4053BFMB
IC655
SWITCH
C663 0.1 F
R695 82k
R653 3300
R493 6800
Q653
Q653 2SA1576
CL668
CL669
CL670
IC652
IC652 LM324M-1
R657 15k :2125 (1/10W) 0.5%
R656 15k :2125 (1/10W) 0.5%
R655 10k :2125 (1/10W) 0.5%
R654 10k :2125 (1/10W) 0.5%
C659 3.3 6.3V
C651 0.01 F
C653 0.01 F
C654 0.01 F
C656 1 20V
C657 1 20V
R672 1k


IC101
CCD IMAGER
Q101
Q123, 125
V SUB REG
Q126
V SUB CONT
Q122
PG CONT
IC121
SYNC GENERATOR
IC121 CXD1159Q
BF
HR
VR
LALTR
EXT
CL IN
CL OUT
FLD
BLK
SYNC
VD
HD
VDD 1
TEST
WND
WND EN
SC
4FSC OUT
4FSC IN
VSS 2
A OUT
A IN
VDD 2
H.COMP
P SEL
V INT
MODE
SC OFF
VSS 1
LALT
N.C.
N.C.
Q655
IRIS CONTROL
IC655
TC4053BFMB
SWITCH
IC651
IRIS DRIVE
HALL AMP
CN651 A3753 8P
1 DRIVE (+)
2 DRIVE (-)
3 CONT (+)
4 CONT (-)
5 BIAS (+)
6 HALL (-)
7 HALL (+)
8 BIAS (-)
LENS BLOCK
Q654
REG
IC653
Q653
Q652
Q656
CN653 B2630 5P
1 AF UNREG
2 AF CONT
3 GND
4 FOCUS ∞
5 FOCUS N
AF BLOCK
CN652 A3753 2P
1 ZOOM T
2 ZOOM W
LENS BLOCK
M905
ZOOM
MOTOR
IC652
CN654 B2630 2P
1 CAM UNREG
2 UNREG GND
TO FU-97 BOARD CN103
(See page 184.)
CAMERA REC mode


CHASSIS GND
CN651 A3753 8P
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
LENS BLOCK
CN653 B2630 5P
AF UNREG
AF CONT
GND
FOCUS ∞
FOCUS N
AF BLOCK
CN652 A3753 2P
ZOOM T
ZOOM W
LENS BLOCK
M905 ZOOM MOTOR
CN654 B2630 2P
CAM UNREG
UNREG GND
TO FU-97 BOARD CN103
(See page 184.)
5 V
6 CS OUT
7 S2
8 VG
9 S1
10 GND
11 X DL 2
12 CLP3
13 X DL 1
14 CLP4
15 TO
16 DATA
17 CK
18 SHUT LEV
19 CLP2
20 V SUB CONT
21 AGC REF
22 MAX GAIN
23 LALT
24 STB
25 BFG
26 AGC CONT F
27 BF
28 AGC CONT R
29 BLK
30 IRIS CONT
31 SYNC
32 PG CONT
33 V SUB
34 CCD DET SW
5C
4FSC OUT
4FSC IN
VSS 2
A OUT
A IN
VDD 2
H COMP

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Be sure to always read [illegible] block" in page 119 when replacing the CD-55 board complete [illegible] board, complete and CCD [illegible] (IC001 on the DT-77 board).

• Signal path

	[illegible]		
	[illegible]	[illegible]	[illegible]
REC	[illegible]	[illegible]	[illegible]

MERA

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< DIODE >

D501	8-719-404-46	
D502	8-719-404-46	
D503	8-719-404-46	
D504	8-719-404-46	
D651	8-719-976-90	

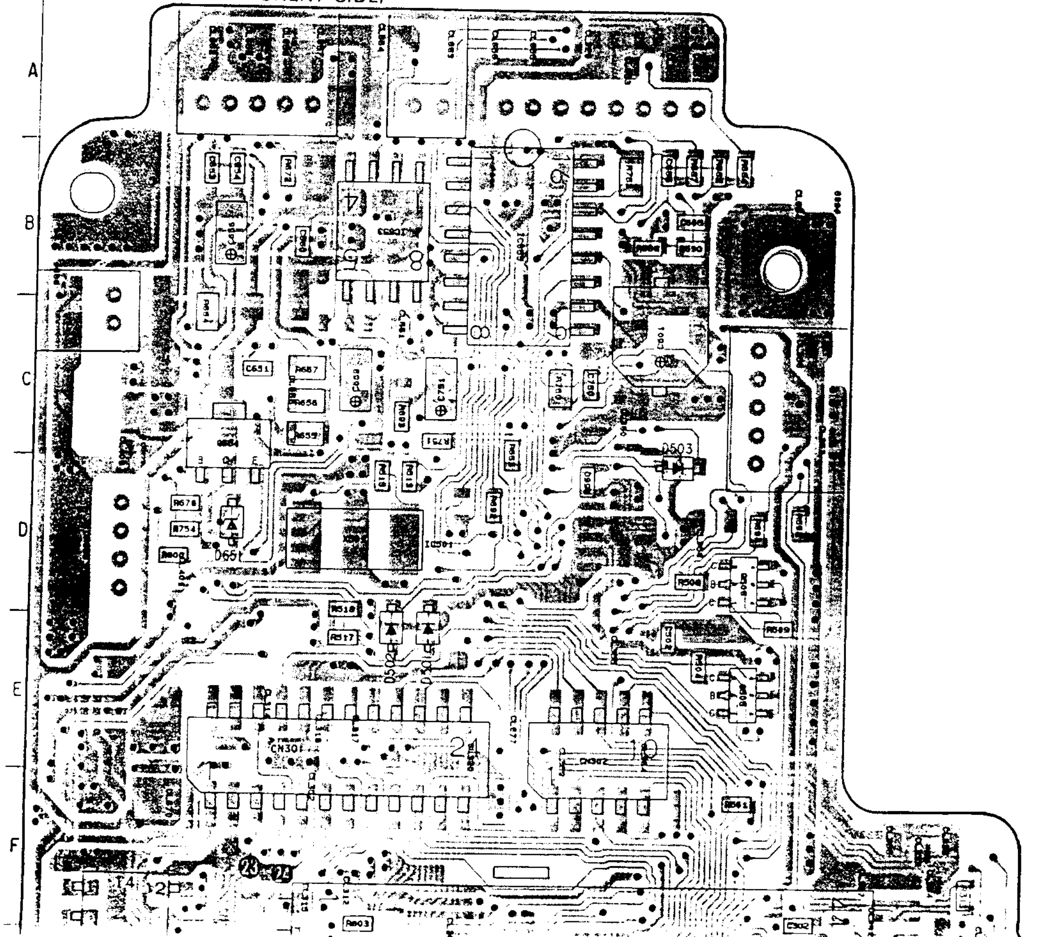
< IC >

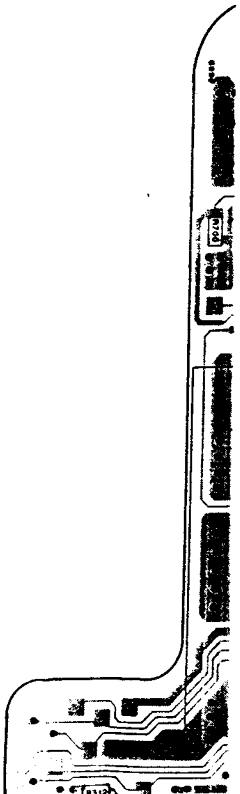
IC301	8-759-635-27	
IC401	8-752-038-XX	C
IC501	8-759-038-85	
IC504	8-759-635-27	
IC508	8-759-937-56	S
IC509	8-759-509-05	X
IC510	8-759-998-96	L
IC651	8-759-981-82	R
IC652	8-759-998-96	L
IC653	8-759-500-11	M
IC655	8-759-208-11	M
IC656	8-759-998-96	L

VC-86 (CAMERA PROCESS, ZOOM/FOCUS), CD-53 (CCD IMAGER) PRINTED WIRING BOARDS

—Ref. No. VC-86, CD-53 BOARDS : 1000 series—

VC-86 BOARD (COMPONENT SIDE)





< DIODE >

D501	8-719-404-46	MA110
D502	8-719-404-46	MA110
D503	8-719-404-46	MA110
D504	8-719-404-46	MA110
D651	8-719-976-90	DTZ4. 3A

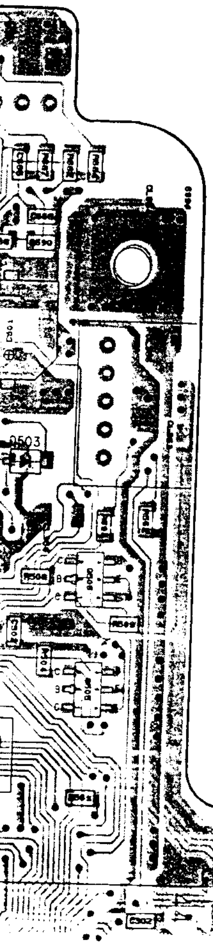
< IC >

IC301	8-759-635-27	M62352GP
IC401	8-752-038-XX	CXA1392R
IC501	8-759-038-85	MC68HC11E9FU-SC400226
IC504	8-759-635-27	M62352GP
IC508	8-759-937-56	S-8054ALB-LM-S
IC509	8-759-509-05	XRU4066BF
IC510	8-759-998-96	LM324D
IC651	8-759-981-82	RC3414M
IC652	8-759-998-96	LM324D
IC653	8-759-500-11	MM1036XF
IC655	8-759-208-11	MC14053BF
IC656	8-759-998-96	LM324D

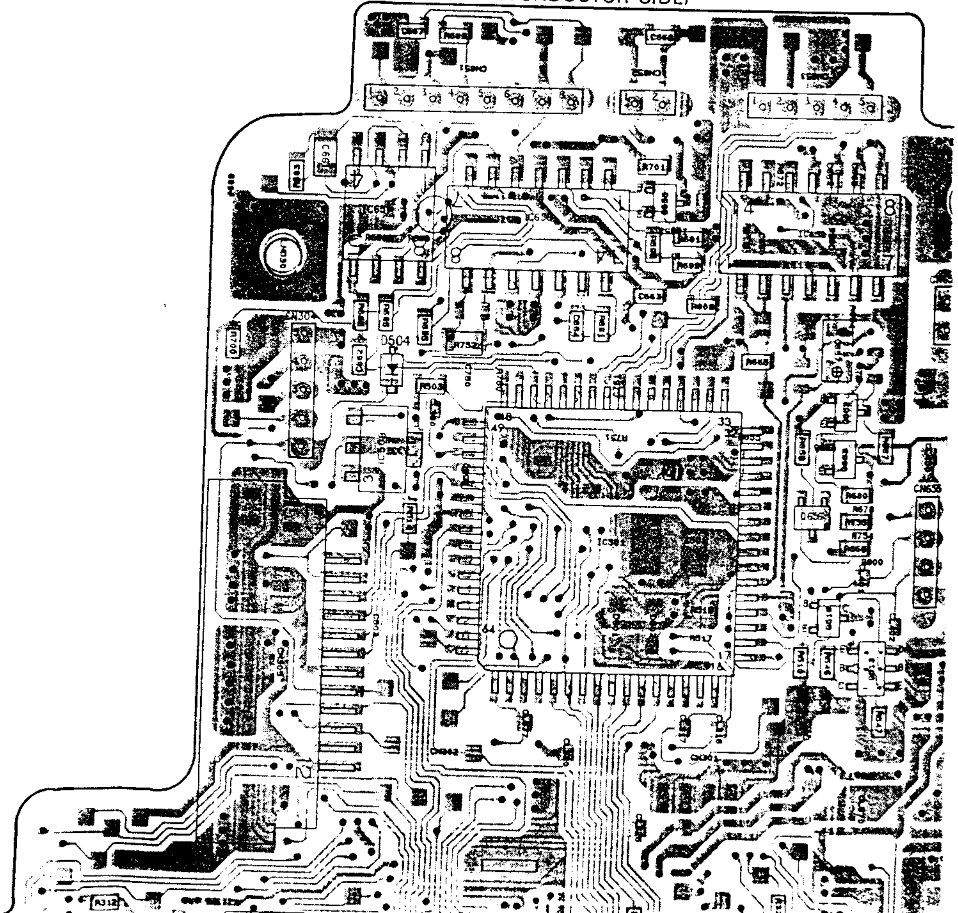
< TRANSISTOR >

Q301	8-729-905-23	2SA1576-R
Q302	8-729-905-23	2SA1576-R
Q303	8-729-907-47	IMZ1T108
Q402	8-729-907-47	IMZ1T108
Q403	8-729-905-23	2SA1576-R
Q404	8-729-905-35	2SC4081-R
Q504	8-729-925-39	IMH8
Q505	8-729-925-39	IMH8
Q506	8-729-925-77	IMH6
Q507	8-729-420-50	UN5215
Q508	8-729-402-78	XN6401
Q509	8-729-925-39	IMH8
Q510	8-729-905-35	2SC4081-R
Q513	8-729-402-84	XN4601-TX
Q513	8-729-907-47	IMZ1T108
Q516	8-729-905-35	2SC4081-R
Q517	8-729-905-23	2SA1576-R
Q652	8-729-402-42	UN5213
Q653	8-729-905-23	2SA1576-R
Q654	8-729-106-60	2SB1115A
Q655	8-729-905-35	2SC4081-R
Q656	8-729-821-88	2SK1332-3

CCD IMAGER) PRINTED WIRING BOARDS



VC-86 BOARD (CONDUCTOR SIDE)



-SC400226

-S

< TRANSISTOR >

Q301	8-729-905-23	2SA1576-R
Q302	8-729-905-23	2SA1576-R
Q303	8-729-907-47	IMZ1T108
Q402	8-729-907-47	IMZ1T108
Q403	8-729-905-23	2SA1576-R
Q404	8-729-905-35	2SC4081-R
Q504	8-729-925-39	IMH8
Q505	8-729-925-39	IMH8
Q506	8-729-925-77	IMH6
Q507	8-729-420-50	UN5215
Q508	8-729-402-78	XN6401
Q509	8-729-925-39	IMH8
Q510	8-729-905-35	2SC4081-R
Q513	8-729-402-84	XN4601-TX
Q513	8-729-907-47	IMZ1T108
Q516	8-729-905-35	2SC4081-R
Q517	8-729-905-23	2SA1576-R
Q652	8-729-402-42	UN5213
Q653	8-729-905-23	2SA1576-R
Q654	8-729-106-60	2SB1115A
Q655	8-729-905-35	2SC4081-R
Q656	8-729-821-88	2SK1332-3

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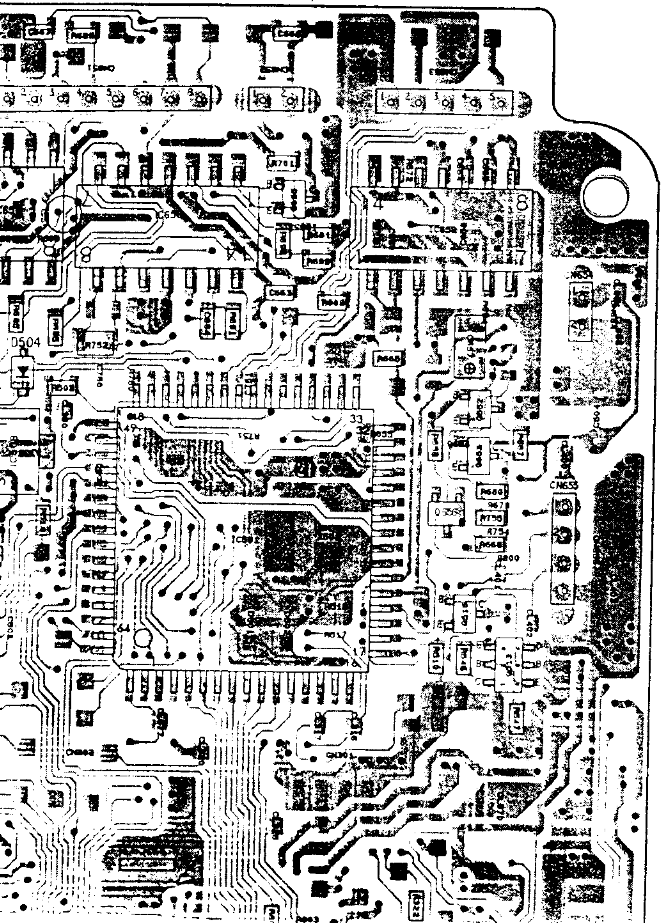
C-86 BOARD (CONDUCTOR SIDE)



< DIODE >

D101	8-719-404-46	MA110
D102	8-719-404-52	MA143
D122	8-719-404-32	MA141WA
D123	8-719-404-46	MA110
D124	8-719-404-32	MA141WA
D126	8-719-404-46	MA110
D128	8-719-404-46	MA110

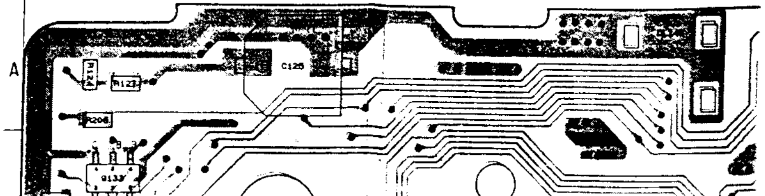
< IC >

IC121	8-752-326-08	CXD1159Q

< TRANSISTOR >

Q101	8-765-420-02
Q102	8-729-905-35
Q121	8-729-907-47
Q122	8-729-402-78
Q123	8-729-402-19
Q125	8-729-905-35
Q126	8-729-907-47
Q129	8-729-905-23
Q131	8-729-907-47
Q132	8-729-907-47
Q133	8-729-907-47
Q135	8-729-907-47
Q136	8-729-402-45

CD-53 BOARD (COMPONENT SIDE)



04-46 MA110
04-52 MA143
04-32 MA141WA
04-46 MA110
04-32 MA141WA

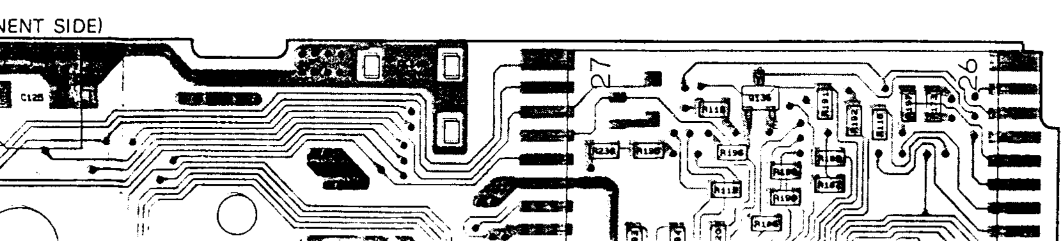
04-46 MA110
04-46 MA110

6-08 CXD1159Q

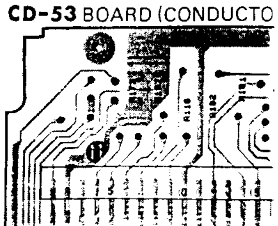
< TRANSISTOR >

Q101	8-765-420-02	2SK300-3
Q102	8-729-905-35	2SC4081-R
Q121	8-729-907-47	IMZ1T108
Q122	8-729-402-78	XN6401
Q123	8-729-402-19	XN6501
Q125	8-729-905-35	2SC4081-R
Q126	8-729-907-47	IMZ1T108
Q129	8-729-905-23	2SA1576-R
Q131	8-729-907-47	IMZ1T108
Q132	8-729-907-47	IMZ1T108
Q133	8-729-907-47	IMZ1T108
Q135	8-729-907-47	IMZ1T108
Q136	8-729-402-45	UN5212

NENT SIDE)



CD-53 BOARD (CONDUCTO



IC651
IC652
IC653

IC655
IC656

VC-86 (CAMERA PROCESS, ZOOM/FOCUS), CD-53 (CCD IMAGER) PRINTED WIRING BOARDS

—Ref. No. VC-86, CD-53 BOARDS : 1000 series—

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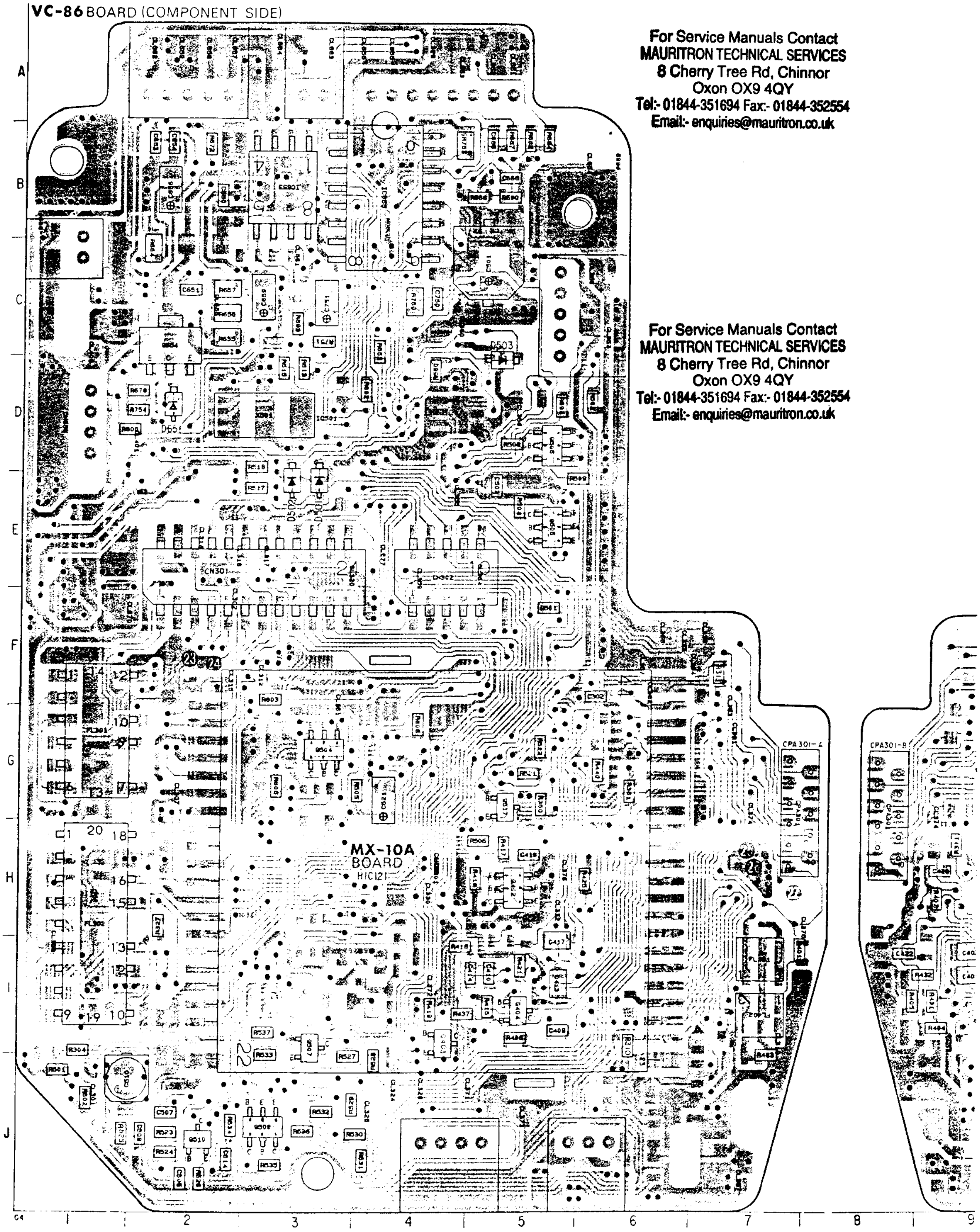
VC-86 BOARD (COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
CN301
FL301
FL302
D661
D503
D502
R678
R754
R801
C651
R657
R658
R659
R618
R617
R603
R508
R509
R506
R304
R501
R502
C507
R523
R524
R534
R532
R536
R530
R535
R531
R537
R533
R527
R437
R483
C437
C408
MX-10A
BOARD
HIC121
CPA301-A
CPA301-B

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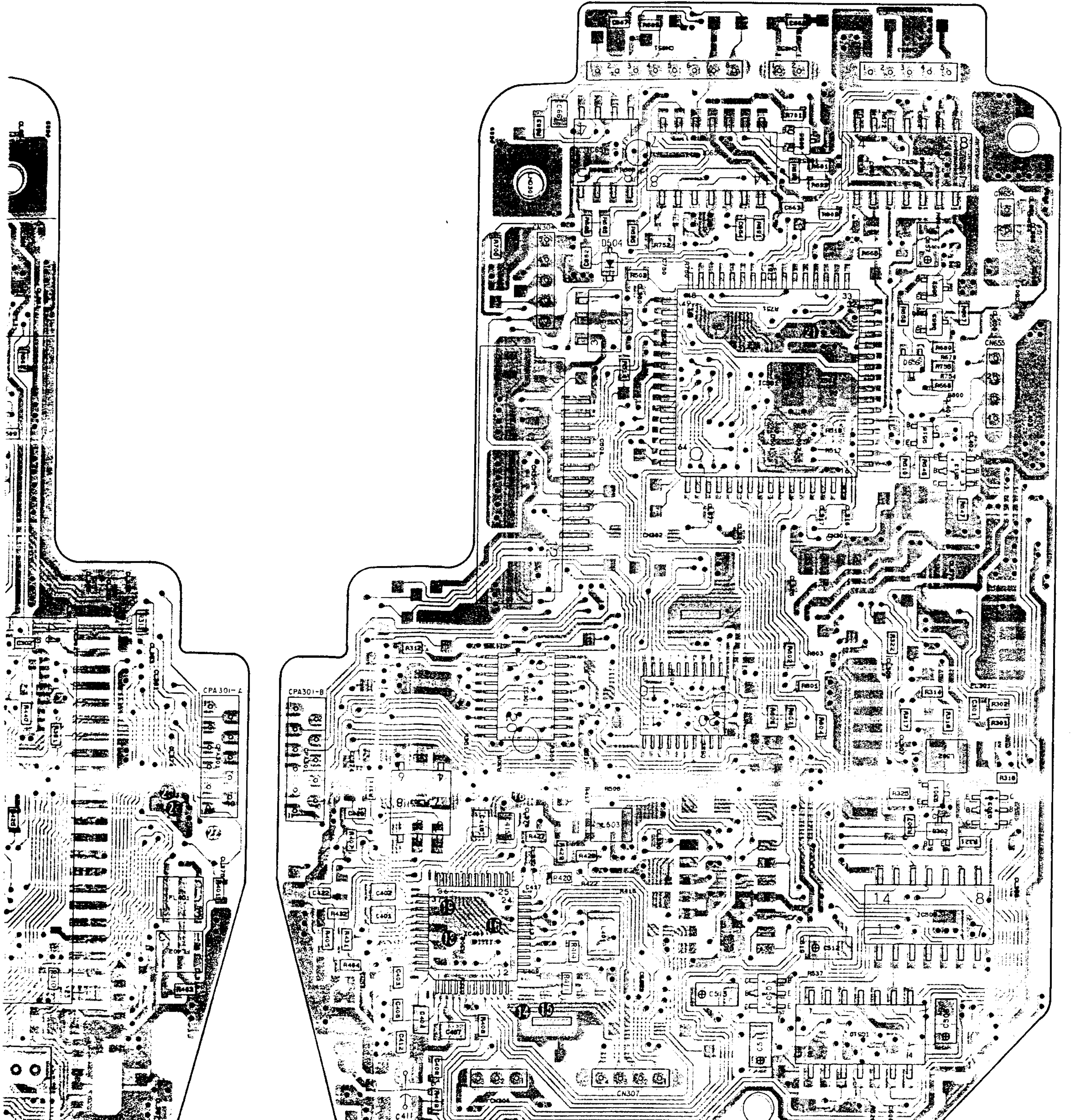
Email:- enquiries@mauritron.co.uk

IC651	8-759-981-82	RC3414M
IC652	8-759-998-96	LM324D
IC653	8-759-500-11	MM1036XF
IC655	8-759-208-11	MC14053BF
IC656	8-759-998-96	LM324D

Q516	8-729-905-35	2SC4081-R
Q517	8-729-905-23	2SA1576-R
Q652	8-729-402-42	UN5213
Q653	8-729-905-23	2SA1576-R
Q654	8-729-106-60	2SB1115A
Q655	8-729-905-35	2SC4081-R
Q656	8-729-821-88	2SK1332-3

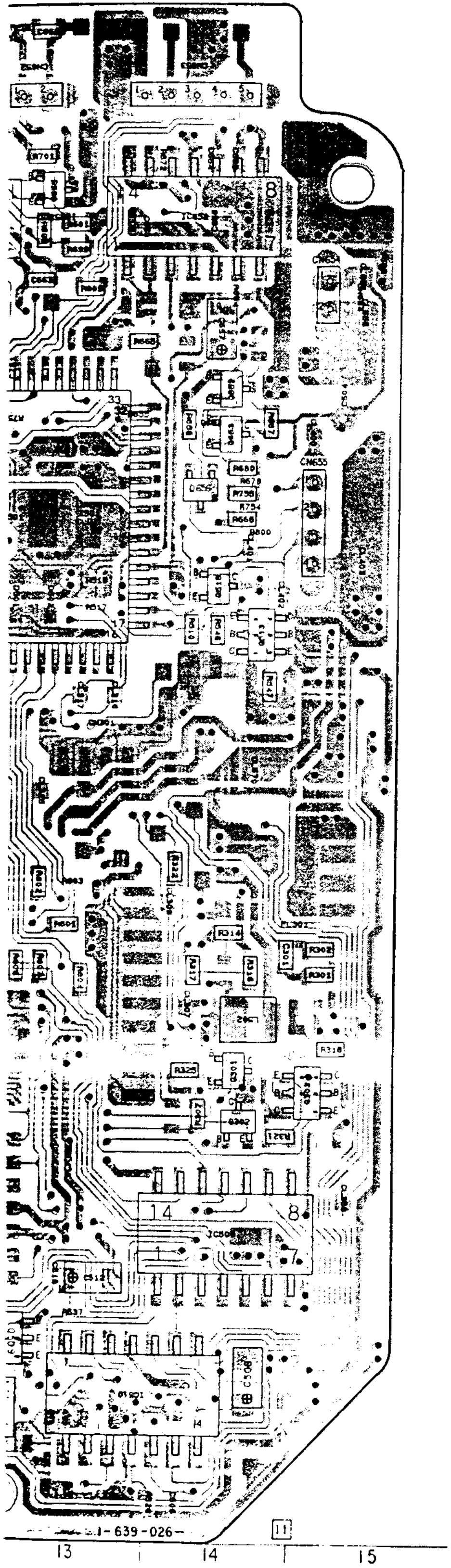
) PRINTED WIRING BOARDS

VC-86 BOARD (CONDUCTOR SIDE)


CPA301-A
CPA301-B
D504
CN654
CN655
CN307
C411
1-639-026-
11
6
7
8
9
10
11
12
13
14
15

8-729-905-35	2SC4081-R
8-729-905-23	2SA1576-R
8-729-402-42	UN5213
8-729-905-23	2SA1576-R
8-729-106-60	2SB1115A
8-729-905-35	2SC4081-R
8-729-821-88	2SK1332-3

R SIDE)



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< DIODE >

D101	8-719-404-46	MA110
D102	8-719-404-52	MA143
D122	8-719-404-32	MA141WA
D123	8-719-404-46	MA110
D124	8-719-404-32	MA141WA
D126	8-719-404-46	MA110
D128	8-719-404-46	MA110

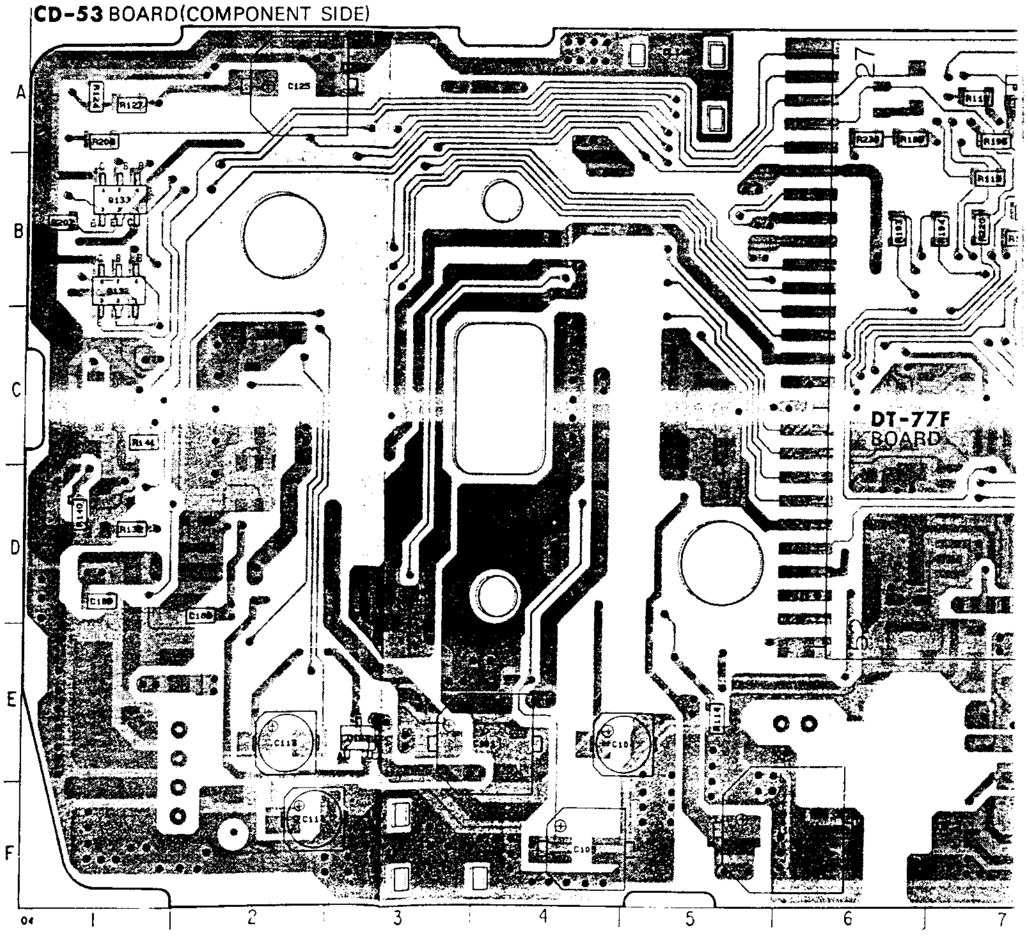
< IC >

IC121	8-752-326-08	CXD1159Q

< TRANSISTOR >

Q101	8-765-420-02	2SK300-3
Q102	8-729-905-35	2SC4081-R
Q121	8-729-907-47	IMZ1T108
Q122	8-729-402-78	XN6401
Q123	8-729-402-19	XN6501
Q125	8-729-905-35	2SC4081-R
Q126	8-729-907-47	IMZ1T108
Q129	8-729-905-23	2SA1576-R
Q131	8-729-907-47	IMZ1T108
Q132	8-729-907-47	IMZ1T108
Q133	8-729-907-47	IMZ1T108
Q135	8-729-907-47	IMZ1T108
Q136	8-729-402-45	UN5212

CD-53 BOARD(COMPONENT SIDE)



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D102	8-719-404-52	MA143
D122	8-719-404-32	MA141WA
D123	8-719-404-46	MA110
D124	8-719-404-32	MA141WA
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D128	8-719-404-46	MA110

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IC121	8-752-326-08	CXD1159Q

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Q101	8-765-420-02	2SK300-3
Q102	8-729-905-35	2SC4081-R
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Q122	8-729-402-78	XN6401
Q123	8-729-402-19	XN6501
Q125	8-729-905-35	2SC4081-R
Q126	8-729-907-47	IMZ1T108
Q129	8-729-905-23	2SA1576-R
Q131	8-729-907-47	IMZ1T108
Q132	8-729-907-47	IMZ1T108
Q133	8-729-907-47	IMZ1T108
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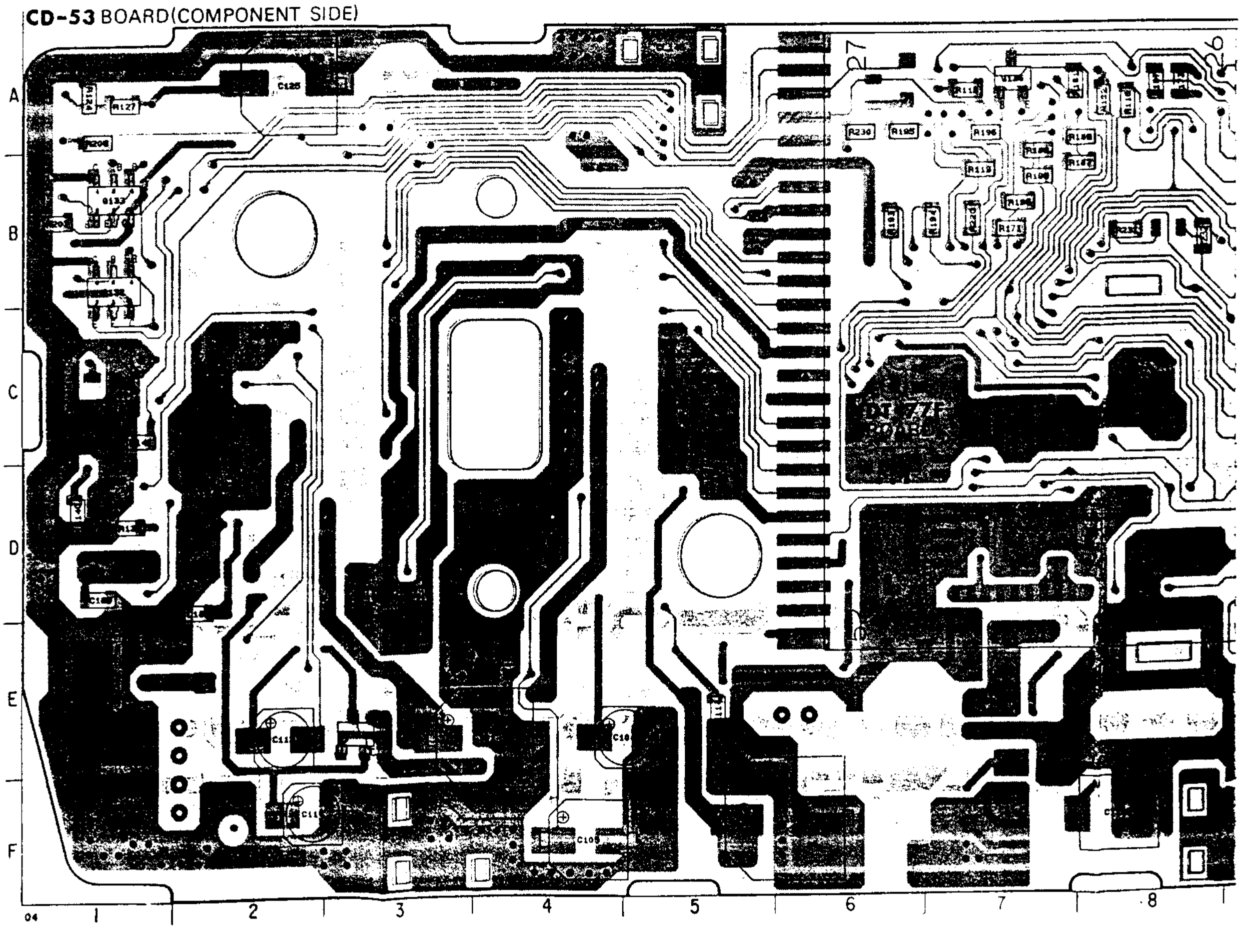
Q136	8-729-402-45	UN5212

CD-53 BOARD(COMPONENT SIDE)


A
B
C
D
E
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C125
R127
R206
Q133
C115
C110
C105
R230
R195
R196
R112
R171

< TRANSISTOR >

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Q102	8-729-905-35	2SC4081-R
Q121	8-729-907-47	IMZ1T108
Q122	8-729-402-78	XN6401
Q123	8-729-402-19	XN6501
Q125	8-729-905-35	2SC4081-R
Q126	8-729-907-47	IMZ1T108
Q129	8-729-905-23	2SA1576-R
Q131	8-729-907-47	IMZ1T108
Q132	8-729-907-47	IMZ1T108
Q133	8-729-907-47	IMZ1T108
Q135	8-729-907-47	IMZ1T108
Q136	8-729-402-45	UN5212

For Service Manuals Contact
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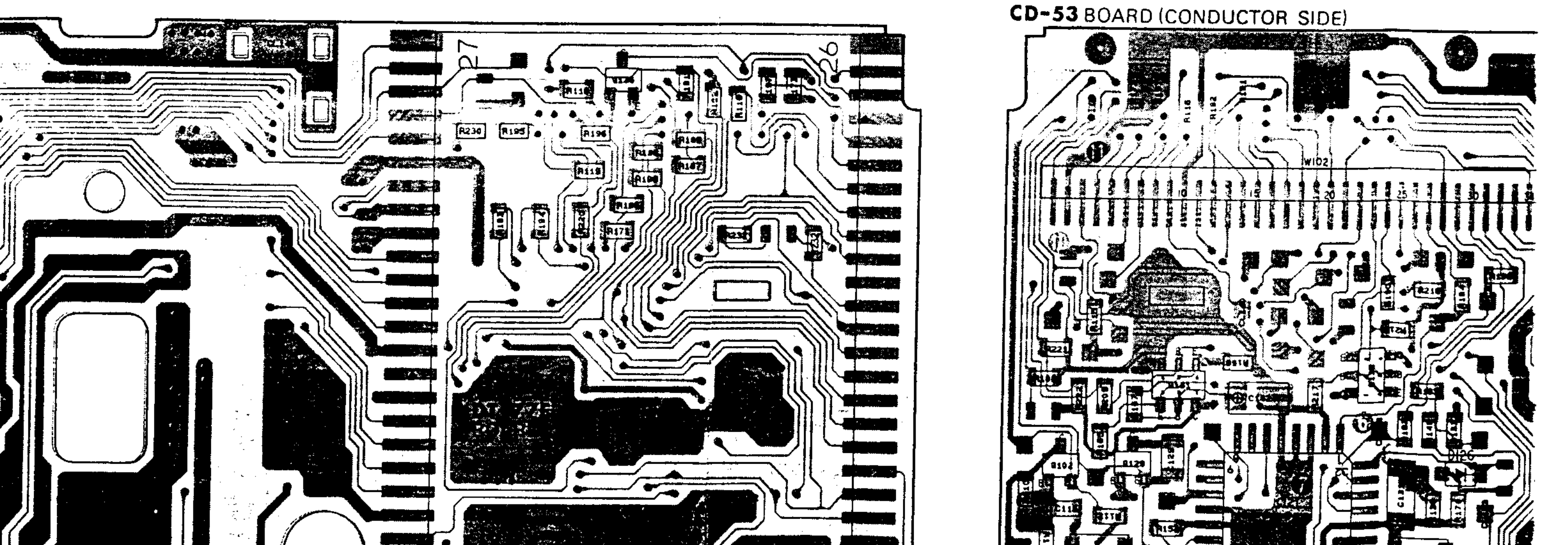
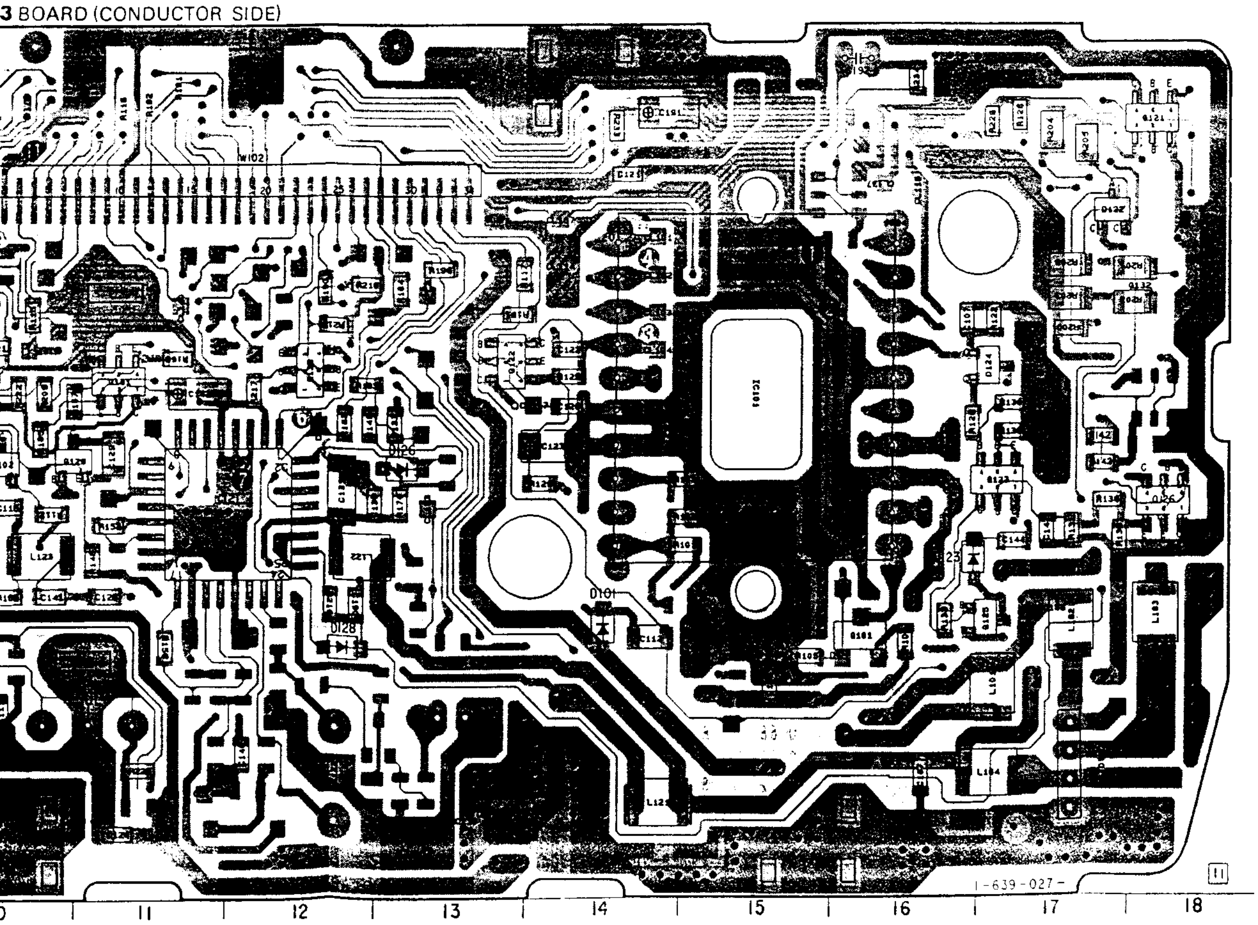
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

CD-53 BOARD (CONDUCTOR SIDE)



3 BOARD (CONDUCTOR SIDE)


W102
IC101
D101
D128
D126
L123
L104
L103
L102
Q121
Q122
Q123
Q126
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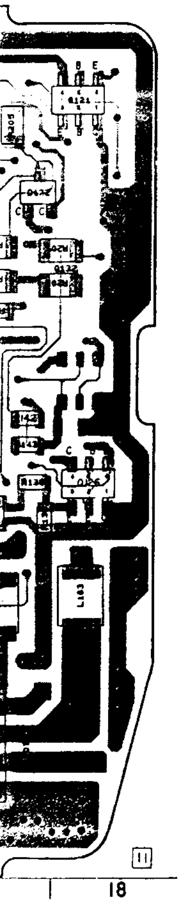

CD-53 BOARD

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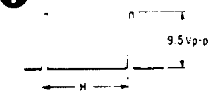

IC101 ① V4 ② V3

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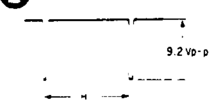

IC101 ③ V2 ⑥ V1

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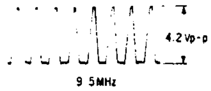

IC101 ⑰ PG

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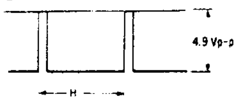

IC101 ⑲ H1

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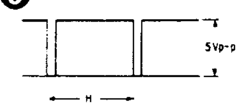

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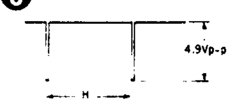

IC121 ① BF

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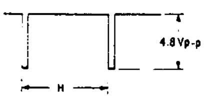

IC121 ㉛ SYNC

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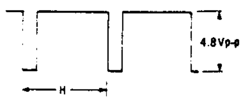

IC121 ㉜ BLK

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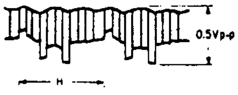

Q101 Ⓢ CCD OUT

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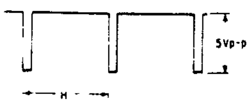

W102 ③ HD

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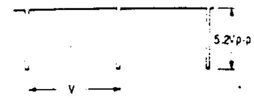
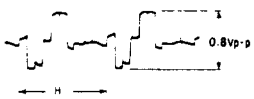


W102 ④ VD

VC-86 BOARD

12



IC401 ① R-Y IN

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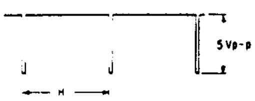

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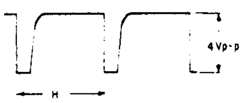

IC401 ⑪ CBLK

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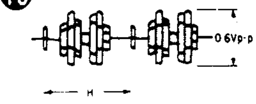

IC401 ⑯ C OUT

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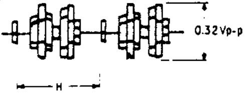

IC401 ⑳ CHROMA OUT

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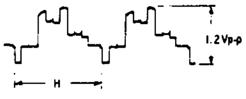

IC401 ㉒ Y OUT

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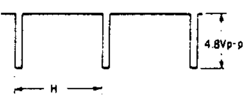

IC401 ㉕ SYNC

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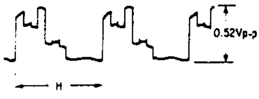

IC401 ㊵ YH IN

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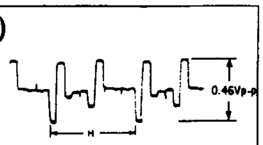

IC401 ㊼ B-Y IN

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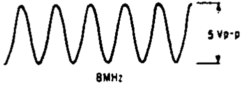

IC501 ㉝

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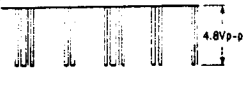

IC501 (53) SCK (H:20μsec)

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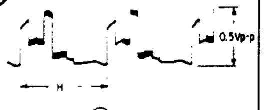
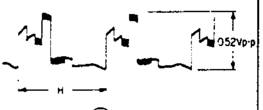


CN301 ⑦ S2

24



CN301 ⑨ S1

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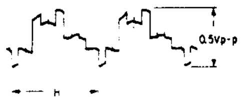

CPA (A8) CAM Y

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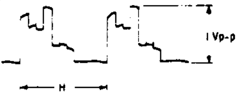

CPA (A9) YH

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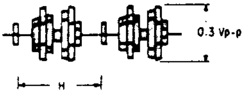

CPA (A10) CAM C

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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Oxon OX9 4QY
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Email:- enquiries@mauritron.co.uk

< DIODE >

D001	8-719-941-86	DAN202U
D002	8-719-404-46	MA110
D101	8-719-949-46	1T32
D104	8-719-941-23	DA204U
D202	8-719-941-86	DAN202U
D203	8-719-941-86	DAN202U
D205	8-719-404-46	MA110
D208	8-719-941-86	DAN202U
D210	8-719-941-86	DAN202U
D211	8-719-941-86	DAN202U

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IC003	8-759-998-98	LM358D
IC004	8-759-148-05	CXA8010M
IC005	8-759-823-65	MCD002AM
IC006	8-759-990-55	CXA8006M
IC007	8-759-008-95	MC14028BF
IC008	8-759-748-72	BR93C46F
IC101	8-759-970-80	MB673198U
IC102	8-759-153-41	uPD6451AGT-611
IC104	8-759-234-20	TC7S08F
IC150	8-752-035-48	CXA1204Q
IC201	8-759-012-00	MC10H116M
IC202	8-759-998-92	LM393D
IC204	8-759-998-32	CXD-2107M
IC205	8-759-148-49	CXA1443N

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Q002	8-729-905-12	DTA144EU
Q003	8-729-905-18	DTC144EU
Q004	8-729-820-47	2SB1202FAT
Q005	8-729-905-35	2SC4081-R
Q007	8-729-905-35	2SC4081-R
Q008	8-729-905-35	2SC4081-R
Q009	8-729-905-35	2SC4081-R
Q010	8-729-907-03	FMG5
Q011	8-729-905-18	DTC144EU
Q012	8-729-905-18	DTC144EU
Q014	8-729-822-48	FC101
Q017	8-729-907-03	FMG5
Q018	8-729-905-18	DTC144EU
Q023	8-729-921-08	DTC144TU
Q150	8-729-905-23	2SA1576-R
Q152	8-729-905-35	2SC4081-R
Q153	8-729-905-23	2SA1576-R
Q202	8-729-905-35	2SC4081-R
Q203	8-729-905-35	2SC4081-R
Q213	8-729-216-22	2SA1162-G
Q214	8-729-119-76	2SA1175-HFE
Q215	8-729-216-22	2SA1162-G
Q217	8-729-102-07	2SC2223-F13
Q218	8-729-905-35	2SC4081-R
Q222	8-729-905-18	DTC144EU
Q223	8-729-905-35	2SC4081-R
Q224	8-729-904-07	FMG2
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Q229	8-729-141-48	2SB624-BV345
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Q233	8-729-102-07	2SC2223-F13
Q234	8-729-102-07	2SC2223-F13
Q238	8-729-117-31	2SC4177-L5
Q239	8-729-905-18	DTC144EU
Q240	8-729-905-18	DTC144EU
Q242	8-729-117-31	2SC4177-L5
Q243	8-729-905-18	DTC144EU
Q244	8-729-140-63	2SA1611-M5M6
Q247	8-729-905-35	2SC4081-R
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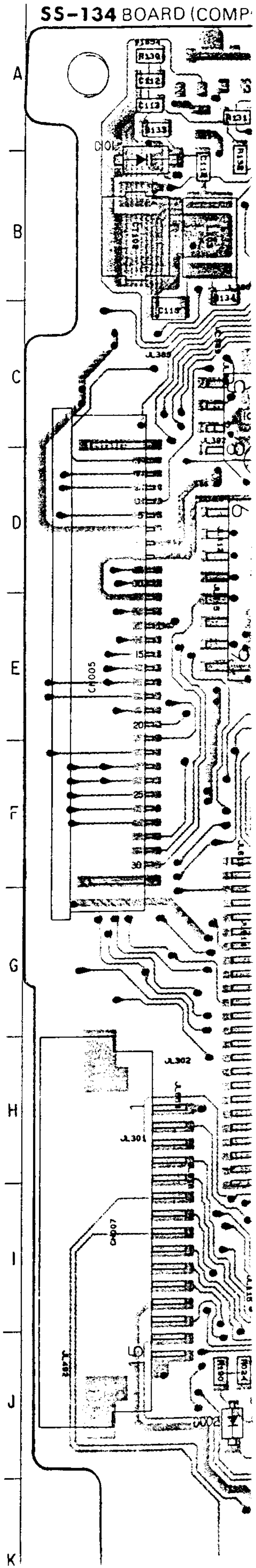
SS-134 (R/P AMP, SEF

—Ref. No. SS-134 BOARI



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DAN202U

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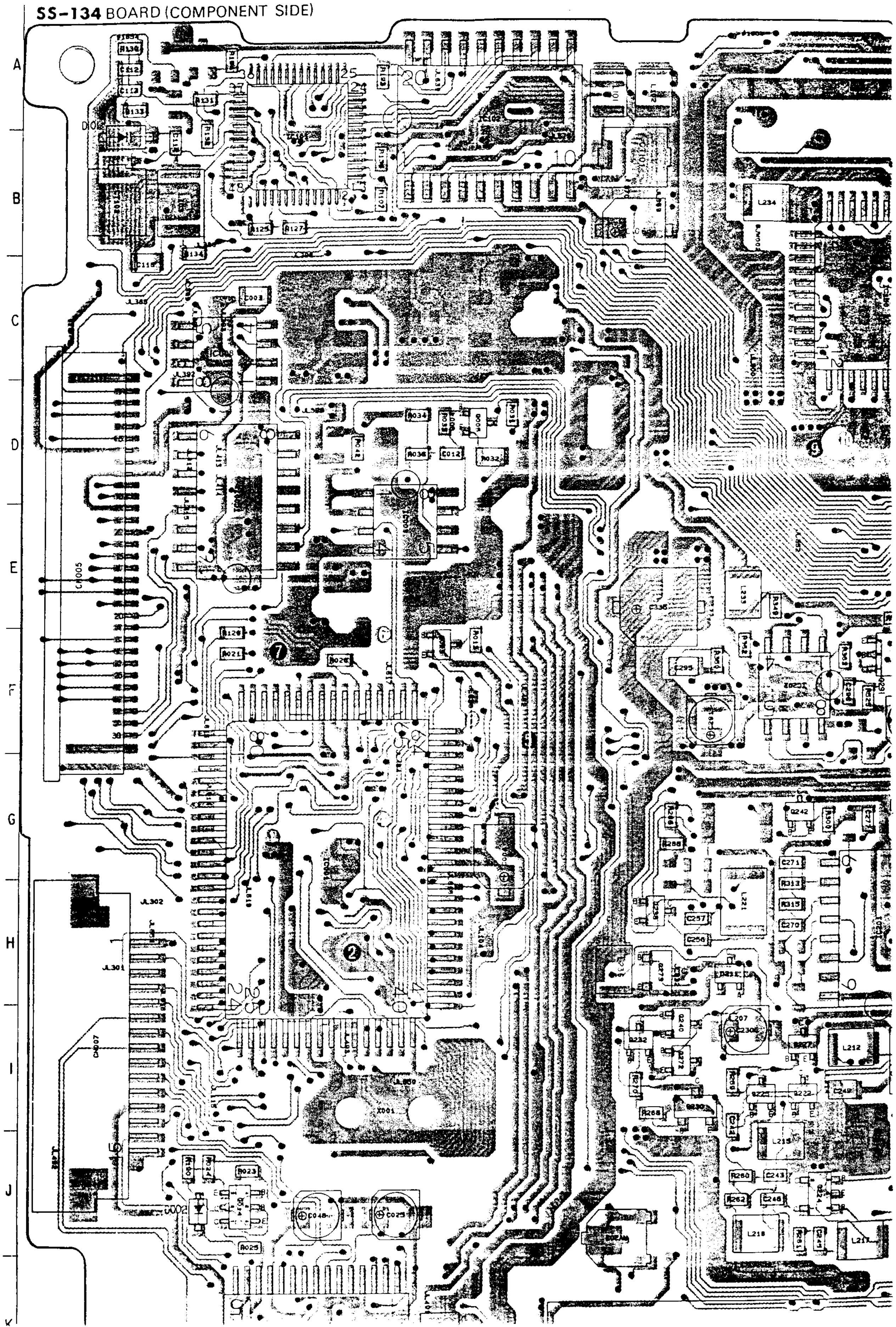
SC2223-F13
SC4177-L5
TC144EU
TC144EU
SC4177-L5

TC144EU
SA1611-M5M6
SC4081-R
MW1
TC144EU

SS-134 (R/P AMP, SERVO, SYSTEM CONTROL) PRINTED WIRING BOARD

—Ref. No. SS-134 BOARD : 2000 series—

SS-134 BOARD (COMPONENT SIDE)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B
C
D
E
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G
H
I
J
K
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IC101
X001
CN005
CN007
L234
L231
L221
L212
L218
L217
C048
C025
JL301
JL302
JL303

OL) PRINTED WIRING BOARD

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Oxon OX9 4QY
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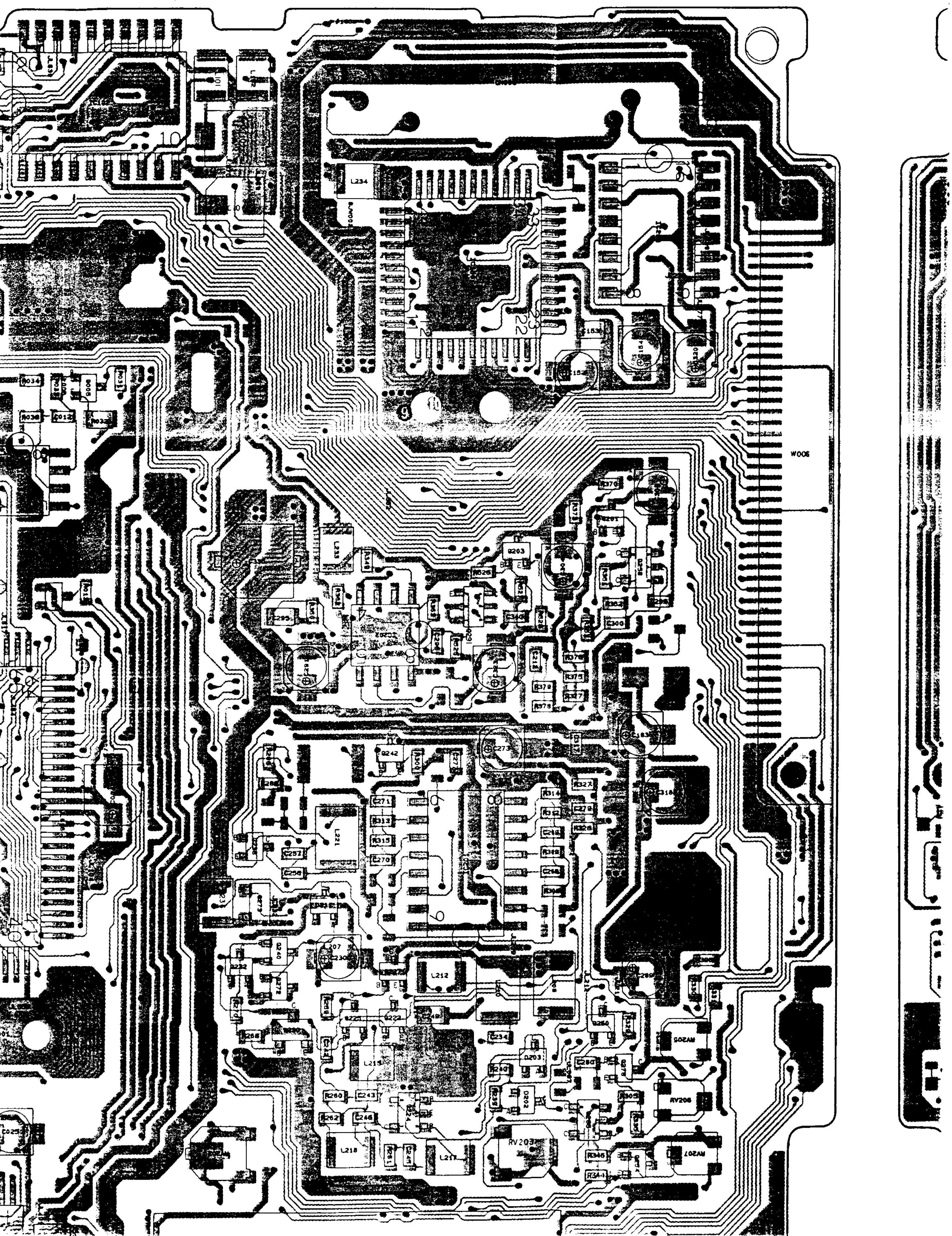
Email:- enquiries@mauritron.co.uk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R034
R036
Q242
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R378
R379
R375
R377
C300
L221
C257
C256
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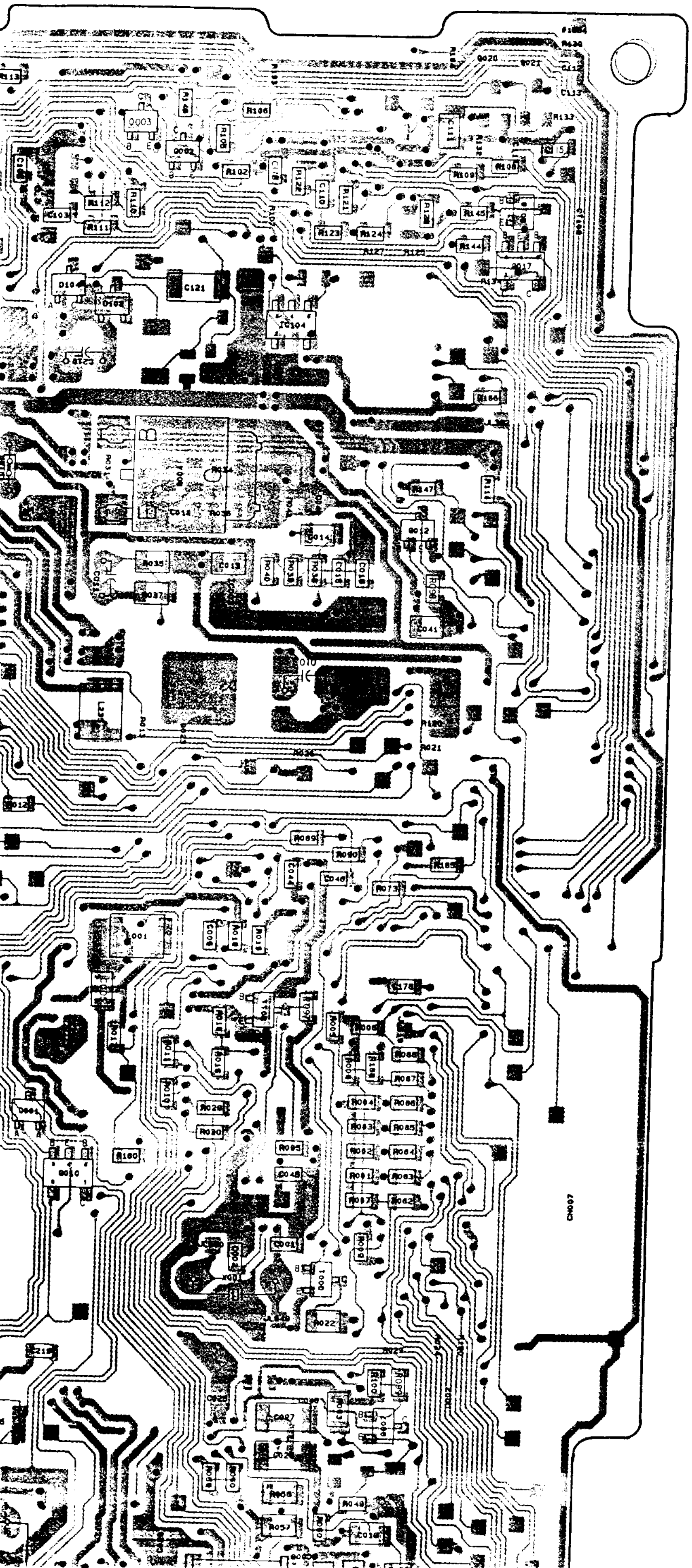
RV207
R346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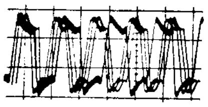
C022
CN007

SS-134 BOARD (RP AMP)

⑪



HR-10 BOARD ④ REC 50mV/div 0.1μsec/div

⑫

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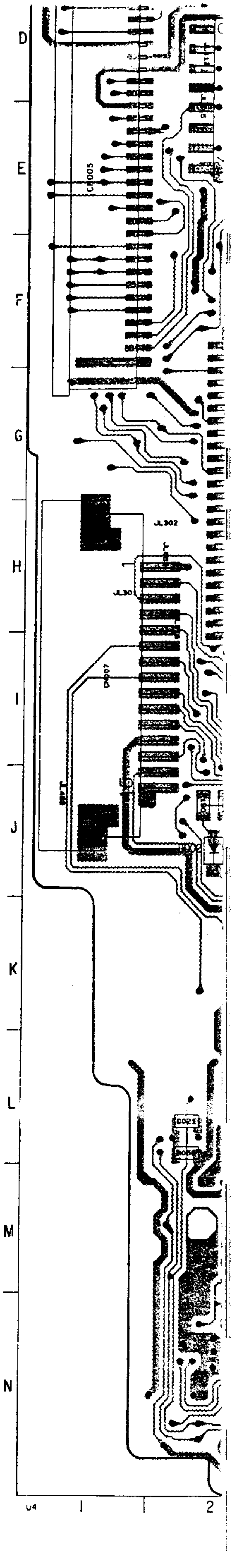
Q005	8-729-905-35	2SC4081-R
Q007	8-729-905-35	2SC4081-R
Q008	8-729-905-35	2SC4081-R
Q009	8-729-905-35	2SC4081-R
Q010	8-729-907-03	FMG5
Q011	8-729-905-18	DTC144EU
Q012	8-729-905-18	DTC144EU
Q014	8-729-822-48	FC101
Q017	8-729-907-03	FMG5
Q018	8-729-905-18	DTC144EU
Q023	8-729-921-08	DTC144TU
Q150	8-729-905-23	2SA1576-R
Q152	8-729-905-35	2SC4081-R
Q153	8-729-905-23	2SA1576-R
Q202	8-729-905-35	2SC4081-R
Q203	8-729-905-35	2SC4081-R
Q213	8-729-216-22	2SA1162-G
Q214	8-729-119-76	2SA1175-HFE
Q215	8-729-216-22	2SA1162-G
Q217	8-729-102-07	2SC2223-F13
Q218	8-729-905-35	2SC4081-R
Q222	8-729-905-18	DTC144EU
Q223	8-729-905-35	2SC4081-R
Q224	8-729-904-07	FMG2
Q225	8-729-905-45	DTA143EU
Q227	8-729-905-35	2SC4081-R
Q229	8-729-141-48	2SB624-BV345
Q230	8-729-141-48	2SB624-BV345
Q231	8-729-905-18	DTC144EU
Q232	8-729-905-18	DTC144EU
Q233	8-729-102-07	2SC2223-F13
Q234	8-729-102-07	2SC2223-F13
Q238	8-729-117-31	2SC4177-L5
Q239	8-729-905-18	DTC144EU
Q240	8-729-905-18	DTC144EU
Q242	8-729-117-31	2SC4177-L5
Q243	8-729-905-18	DTC144EU
Q244	8-729-140-63	2SA1611-M5M6
Q247	8-729-905-35	2SC4081-R
Q248	8-729-903-10	FMW1
Q249	8-729-905-18	DTC144EU
Q250	8-729-905-12	DTA144EU
Q251	8-729-905-35	2SC4081-R
Q252	8-729-102-07	2SC2223-F13
Q254	8-729-905-35	2SC4081-R
Q255	8-729-904-07	FMG2
Q256	8-729-905-12	DTA144EU
Q257	8-729-905-18	DTC144EU
Q258	8-729-903-10	FMW1
Q259	8-729-905-35	2SC4081-R
Q260	8-729-905-35	2SC4081-R
Q261	8-729-905-23	2SA1576-R
Q262	8-729-905-23	2SA1576-R
Q263	8-729-907-26	IMX1
Q265	8-729-905-35	2SC4081-R
Q266	8-729-905-35	2SC4081-R
Q267	8-729-905-35	2SC4081-R
Q268	8-729-905-23	2SA1576-R
Q269	8-729-907-26	IMX1
Q272	8-729-922-94	DTC143TU
Q273	8-729-141-48	2SB624-BV345
Q277	8-729-905-35	2SC4081-R
Q278	8-729-905-35	2SC4081-R
Q280	8-729-905-35	2SC4081-R
Q291	8-729-907-26	IMX1
Q295	8-729-905-35	2SC4081-R



U
'FAT
-R

I-R
I-R
I-R

U

U

U
U

-R
-R
-R
-R
-R

-G
-HFE
-G
-F13
-R

U
-R

U
-R

BV345
BV345
U
U
-F13

-F13
-L5
U
U
-L5

U
-M5M6
-R

U

U
-R
-F13
-R

U
U

-R

-R
-R
-R

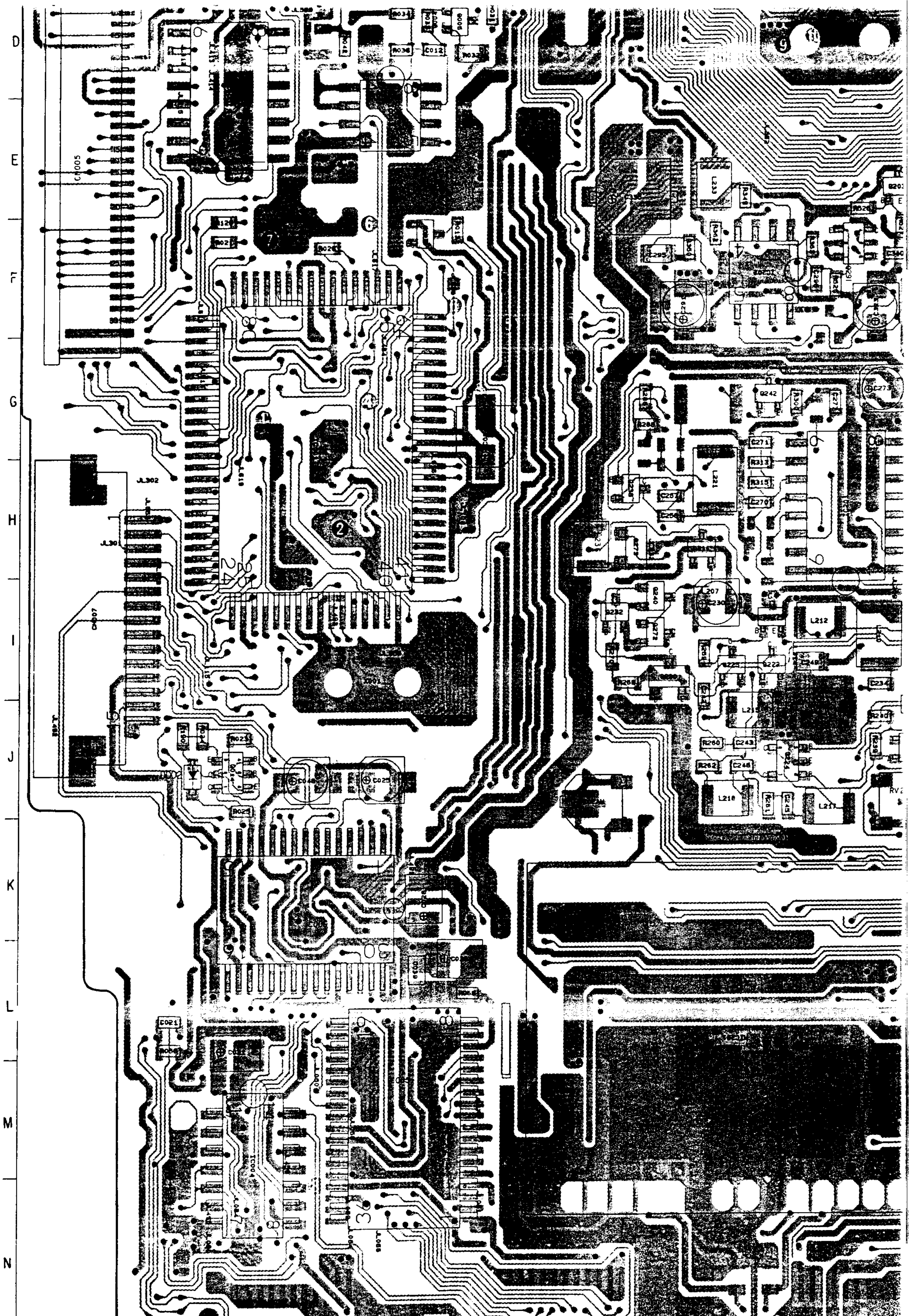
-R
-R

-R
-R

J
3V345

-R
R
R

R



D
E
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G
H
I
J
K
L
M
N
1
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3
4
5
6
7
8
JL302
JL301
C1005
L212
L218
L217
L221
L213
R260
R262
C243
C246
C230
C234
C271
C270
R313
R315
Q242
Q222

P AMP **R/P AMP**

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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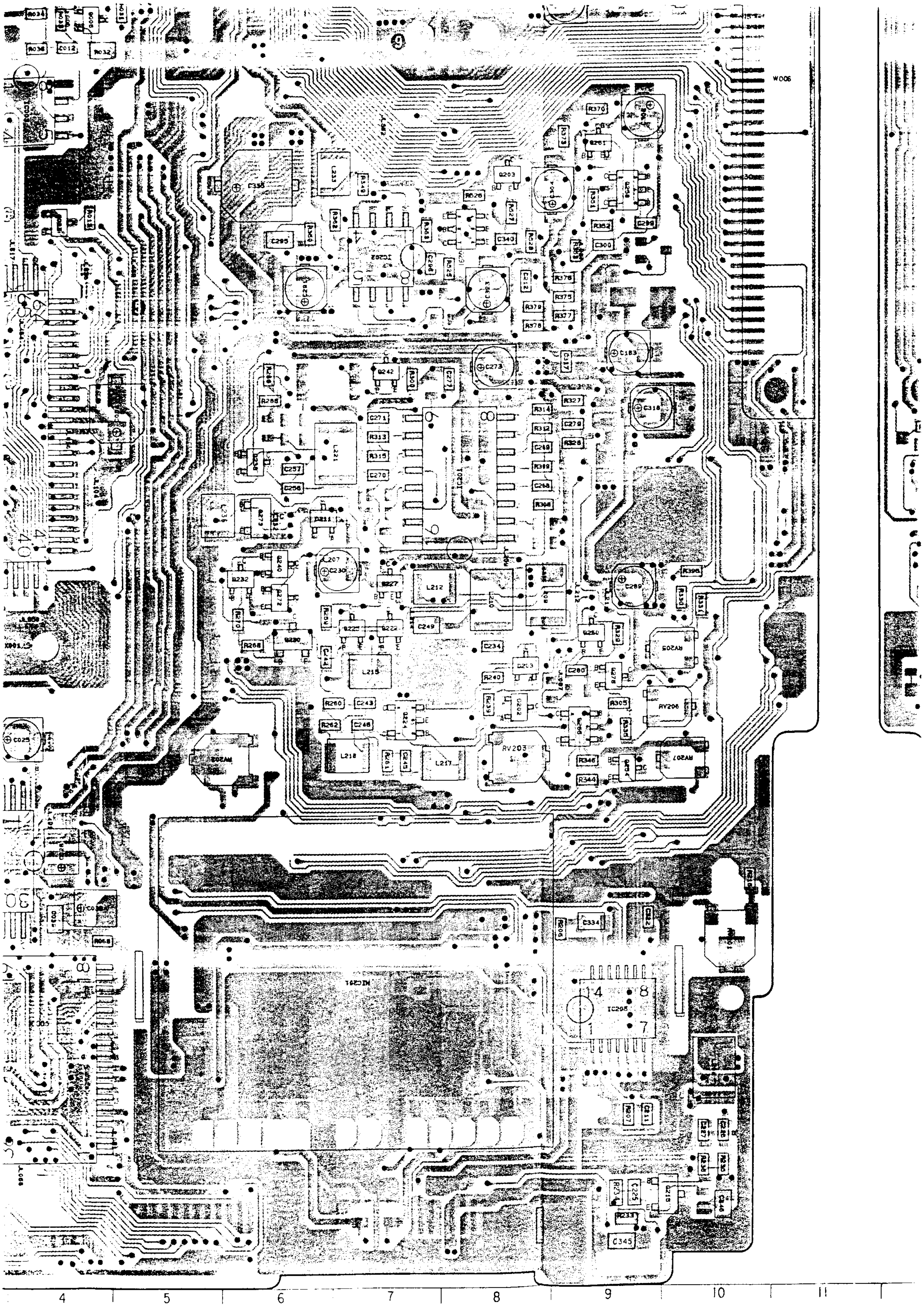
Email:- enquiries@mauritron.co.uk


W006
R370
Q201
Q203
R526
R527
R352
C299
C300
R376
R375
R377
R379
R378
C183
C273
Q242
C271
R313
R315
C270
IC201
L221
C257
C256
R314
R312
R327
C279
R328
C318
C207
C230
Q227
L212
C249
Q225
Q222
Q230
R268
R270
Q232
Q240
Q272
Q273
Q211
C234
Q213
L215
R240
C280
R260
C243
R262
C246
Q224
L218
L217
RV203
RV205
RV206
RV207
R305
R346
R344
R396
C289
Q250
R206
C334
IC205
14
8
1
7
R307
C345
R233
C025
C295
C336
L233
IC202
C263
R369
R265
L216
4
5
6
7
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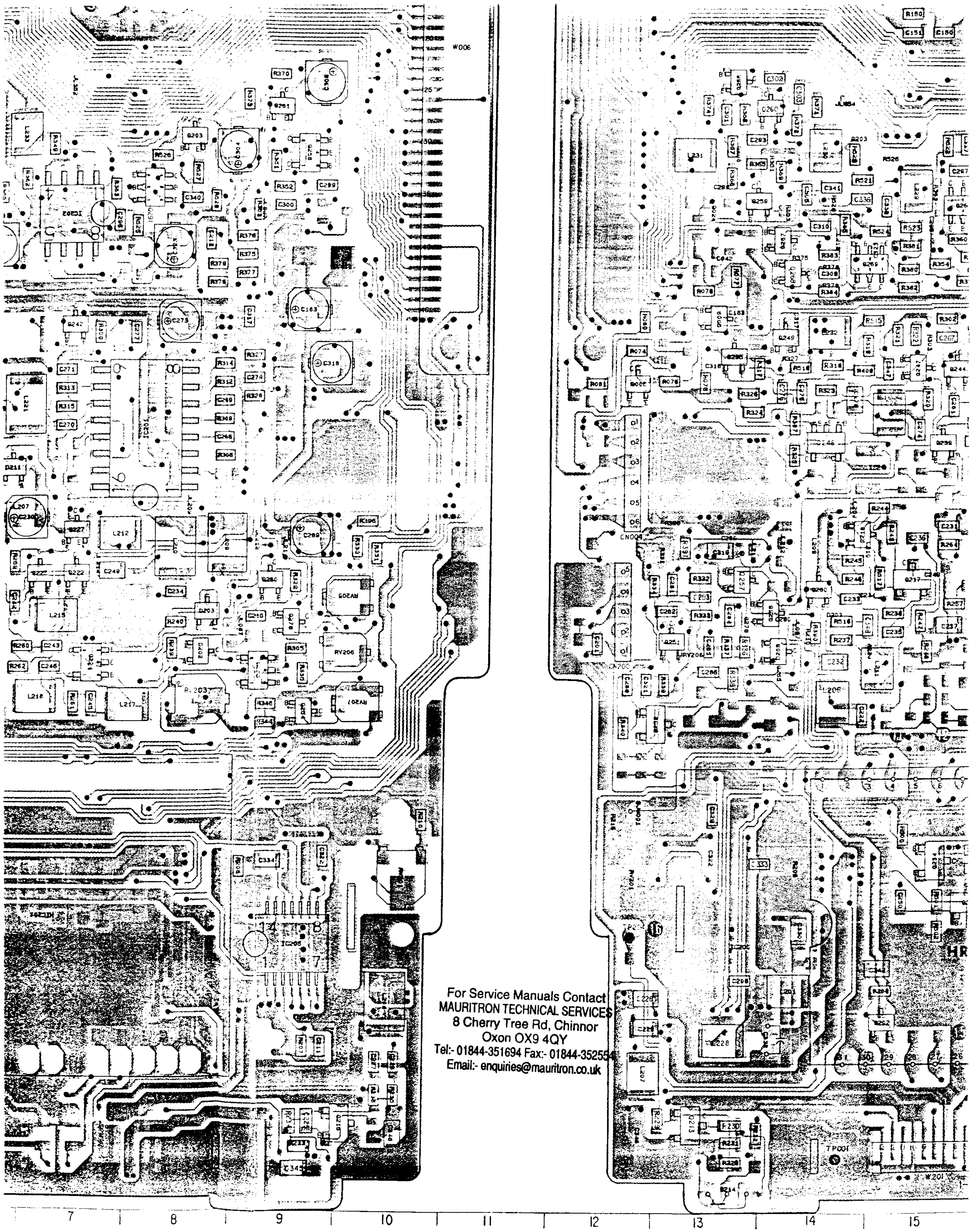
9
10
11


W006
CN004
IC201
IC202
IC205
RY203
RY205
RY206
RY207
TP001
W201
7
8
9
10
11
12
13
14
15

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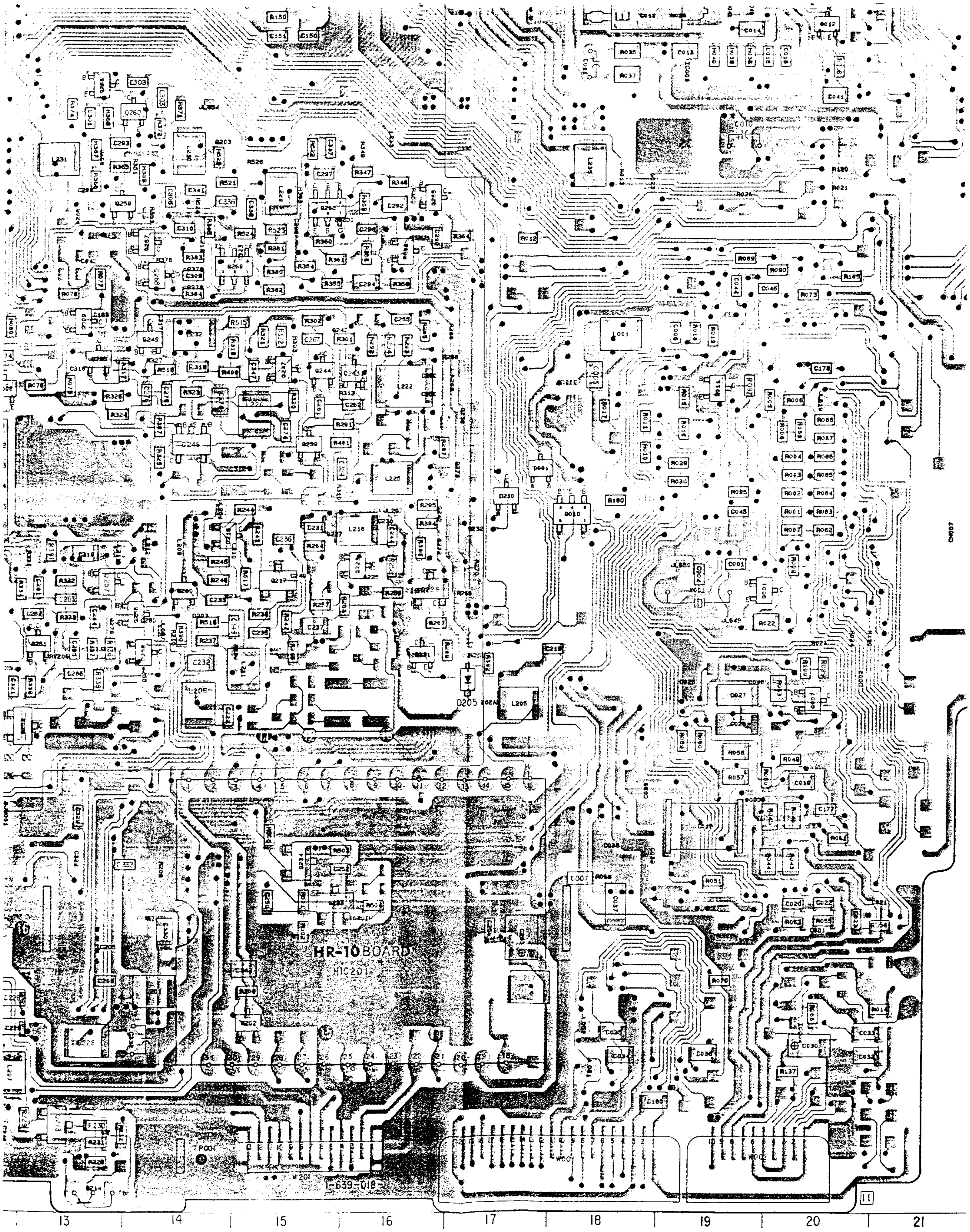
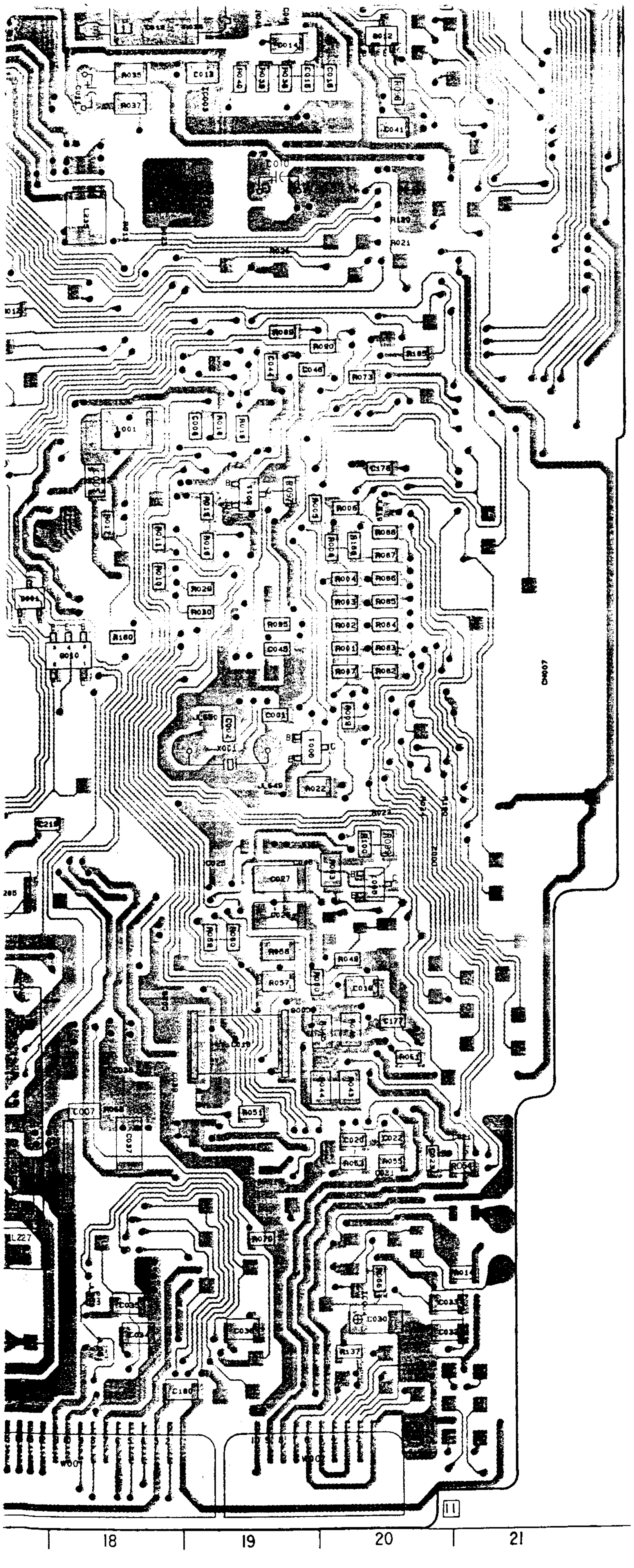
R


HR-10 BOARD
HIC201
1-639-018
TP001
13
14
15
16
17
18
19
20
21

R/P AMP R/P AMP



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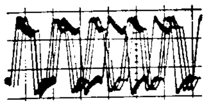
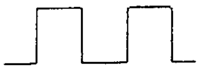
SS-134 BOARD (RP AMP)

⑪



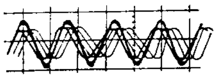
HR-10 BOARD ④ REC 50mV/div 0.1μsec/div

⑫



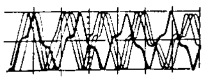
HR-10 BOARD ⑥ REC/PB 3.6Vp-p(2V)

⑬



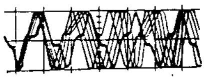
HR-10 BOARD ⑪ PB 0.5V/div 0.1μsec/div

⑭



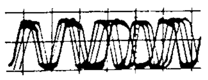
HR-10BOARD ㉒ REC 2V/div 0.1μsec/div

⑮



HR-10 BOARD ㉗ REC 2V/div 0.1μsec/div

⑯



TP204 REC 0.1V/div 0.1μsec/div

'P AMP

SS-134 (R/P AMP, SERVO, SYSTEM CONTROL) SCHEMATIC DIAGRAM
—Ref. No. SS-134 BOARD : 2000 series—

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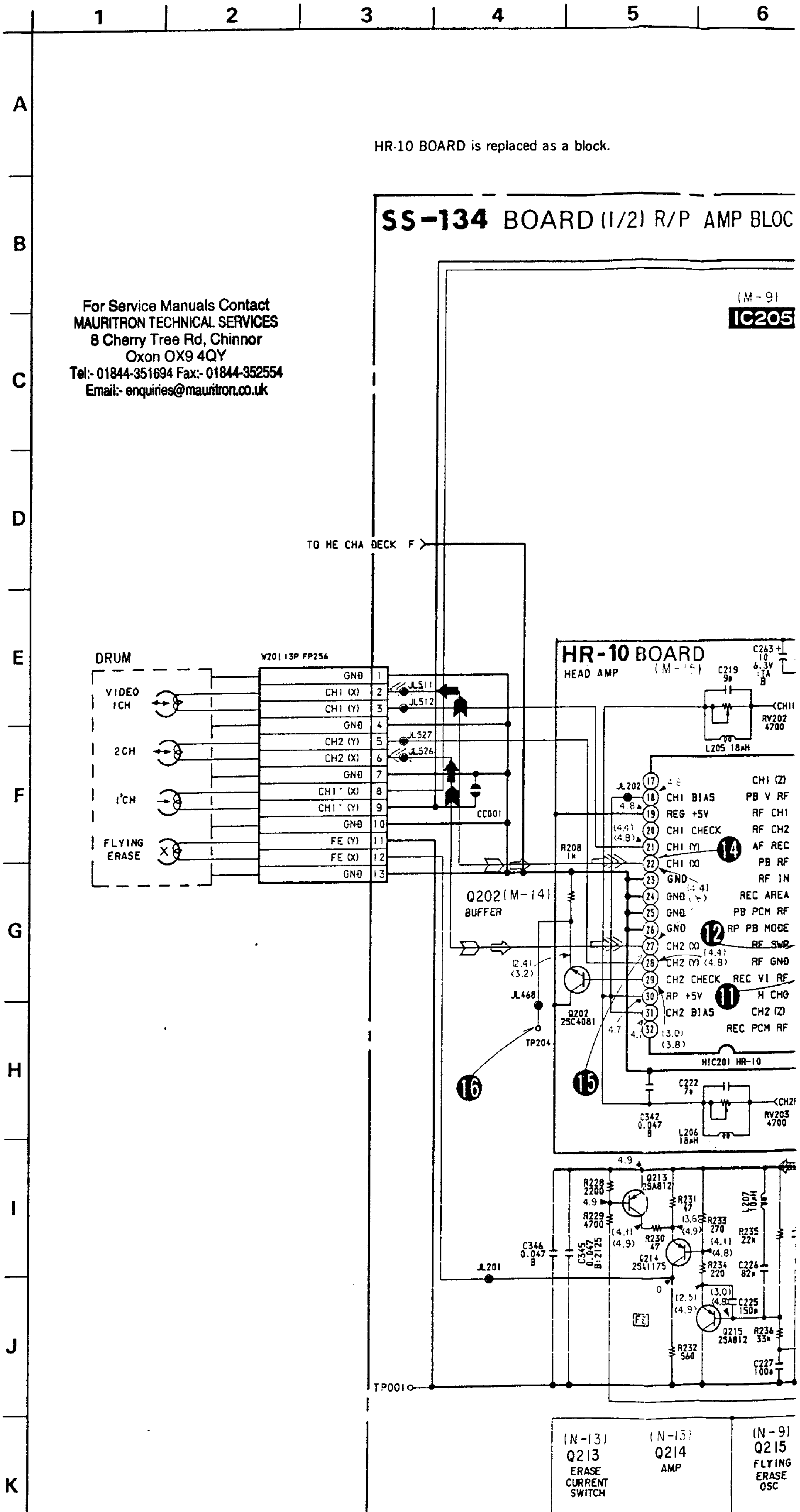
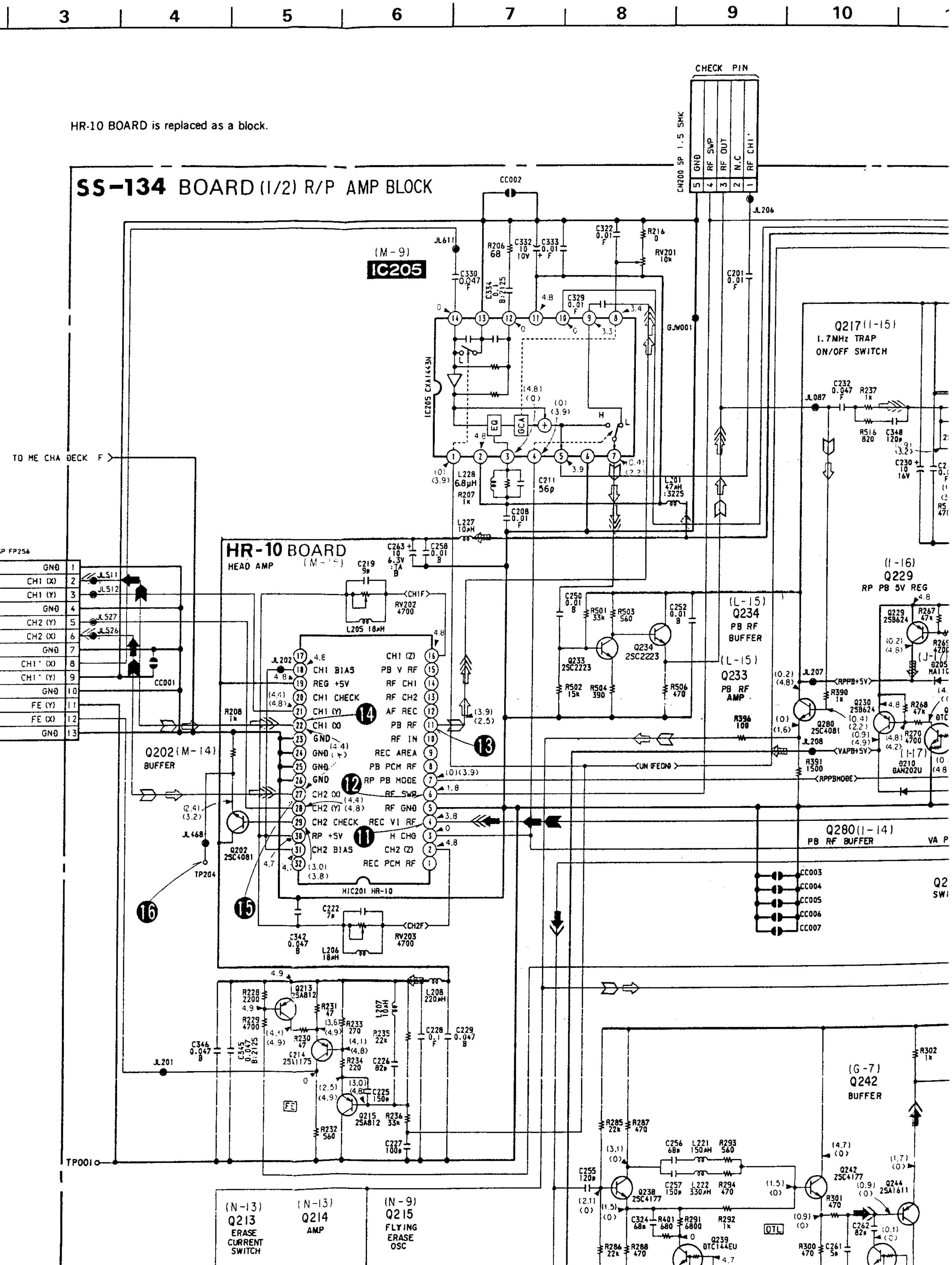
HR-10 BOARD is replaced as a block.


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
SS-134 BOARD (1/2) R/P AMP BLOC
(M-9)
IC205
TO ME CHA DECK F
DRUM
VIDEO 1CH
2CH
1'CH
FLYING ERASE
V201 13P FP256
GND 1
CH1 (X) 2
CH1 (Y) 3
GND 4
CH2 (Y) 5
CH2 (X) 6
GND 7
CH1' (X) 8
CH1' (Y) 9
GND 10
FE (Y) 11
FE (X) 12
GND 13
JL511
JL512
JL527
JL526
CC001
HR-10 BOARD
HEAD AMP
C263 10 6.3V TA B
C219 9p
RV202 4700
L205 18µH
CH1
JL202
17 CH1 (Z)
18 CH1 BIAS PB V RF
19 REG +5V RF CH1
20 CH1 CHECK RF CH2
21 CH1 (Y) AF REC
22 CH1 (X) PB RF
23 GND RF IN
24 GND REC AREA
25 GND PB PCM RF
26 GND RP PB MODE
27 CH2 (X) RF SWP
28 CH2 (Y) RF GND
29 CH2 CHECK REC V1 RF
30 RP +5V H CHG
31 CH2 BIAS CH2 (Z)
32 REC PCM RF
⓮
⓬
⓫
⓯
⓰
R208 1k
Q202 (M-14) BUFFER
Q202 2SC4081
JL468
TP204
HIC201 HR-10
C222 7p
C342 0.047 B
L206 18µH
RV203 4700
CH2
Q213 2SA812
R228 2200
R229 4700
R231 47
R230 47
Q214 2SA1175
R233 270
R234 220
R235 22k
L207
C226 82p
C225 150p
Q215 2SA812
R236 33k
R232 560
C227 100p
C346 0.047 B
C345 0.047 B:2125
JL201
TP001
(N-13) Q213 ERASE CURRENT SWITCH
(N-13) Q214 AMP
(N-9) Q215 FLYING ERASE OSC

STEM CONTROL) SCHEMATIC DIAGRAM

series—



HR-10 BOARD is replaced as a block.

3
4
5
6
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10
CHECK PIN
CN200 SP 1.5 5MK
GND
RF SWP
RF OUT
N.C
RF CH1'
SS-134 BOARD (1/2) R/P AMP BLOCK
CC002
JL206
JL611
(M-9)
IC205
IC205 CXA1443N
C330 0.047 F
R206 68
C332 10 10V
C333 0.01 F
C334 0.1 B:2125
C329 0.01 F
C322 0.01 F
R216 0
RV201 10k
C201 0.01 F
GJW001
EQ
GCA
L228 6.8μH
R207 1k
C211 56p
C208 0.01 F
L227 10μH
L201 47μH :3225
TO ME CHA DECK F
Q217 (I-15)
1.7MHz TRAP
ON/OFF SWITCH
JL087
C232 0.047 F
R237 1k
R516 820
C348 120p
C230 10 16V
HR-10 BOARD
HEAD AMP
(M-15)
C263 10 6.3V :TA B
C258 0.01 B
C219 9p
RV202 4700
L205 18μH
SP FP256
GND
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
GND
CH1' (X)
CH1' (Y)
GND
FE (Y)
FE (X)
GND
JL511
JL512
JL527
JL526
CC001
JL202
CH1 BIAS
REG +5V
CH1 CHECK
CH1 (Y)
CH1 (X)
GND
GND
GND
GND
CH2 (X)
CH2 (Y)
CH2 CHECK
RP +5V
CH2 BIAS
CH1 (Z)
PB V RF
RF CH1
RF CH2
AF REC
PB RF
RF IN
REC AREA
PB PCM RF
RP PB MODE
RF SWP
RF GND
REC VI RF
H CHG
CH2 (Z)
REC PCM RF
HIC201 HR-10
R208 1k
Q202 (M-14)
BUFFER
Q202 2SC4081
JL468
TP204
C222 7p
RV203 4700
L206 18μH
C342 0.047 B
C250 0.01 B
R501 33k
R503 560
C252 0.01 B
Q234 2SC2223
Q233 2SC2223
R502 15k
R504 390
R506 470
(L-15)
Q234
PB RF BUFFER
(L-15)
Q233
PB RF AMP
R396 100
(I-16)
Q229
RP PB 5V REG
Q229 2SB624
R267 47k
JL207
RPPB+5V
R390 1k
Q230 2SB624
R268 47k
Q280 2SC4081
JL208
VAPB+5V
R270 4700
R391 1500
RPPBMODE
UN (FEON)
D210 DAN202U
Q280 (I-14)
PB RF BUFFER
VA P
CC003
CC004
CC005
CC006
CC007
R228 2200
Q213 2SA812
R231 47
R229 4700
R233 270
R230 47
R235 22k
L207 10μH
L208 220μH
C228 0.1 F
C229 0.047 B
C346 0.047 B
C345 0.047 B:2125
C214 2SA1175
R234 220
C226 82p
JL201
C225 150p
Q215 2SA812
R236 33k
R232 560
C227 100p
TP001
(G-7)
Q242
BUFFER
R302 1k
R285 22k
R287 470
C256 68p
L221 150μH
R293 560
C255 120p
Q238 2SC4177
C257 150p
L222 330μH
R294 470
Q242 2SC4177
Q244 2SA1611
R301 470
C324 68p
R401 680
R291 6800
R292 1k
Q239 DTC144EU
DTL
R300 470
C261 5p
C262 82p
R286 22k
R288 470
(N-13)
Q213
ERASE CURRENT SWITCH
(N-13)
Q214
AMP
(N-9)
Q215
FLYING ERASE OSC
⑪
⑫
⑬
⑭
⑮
⑯

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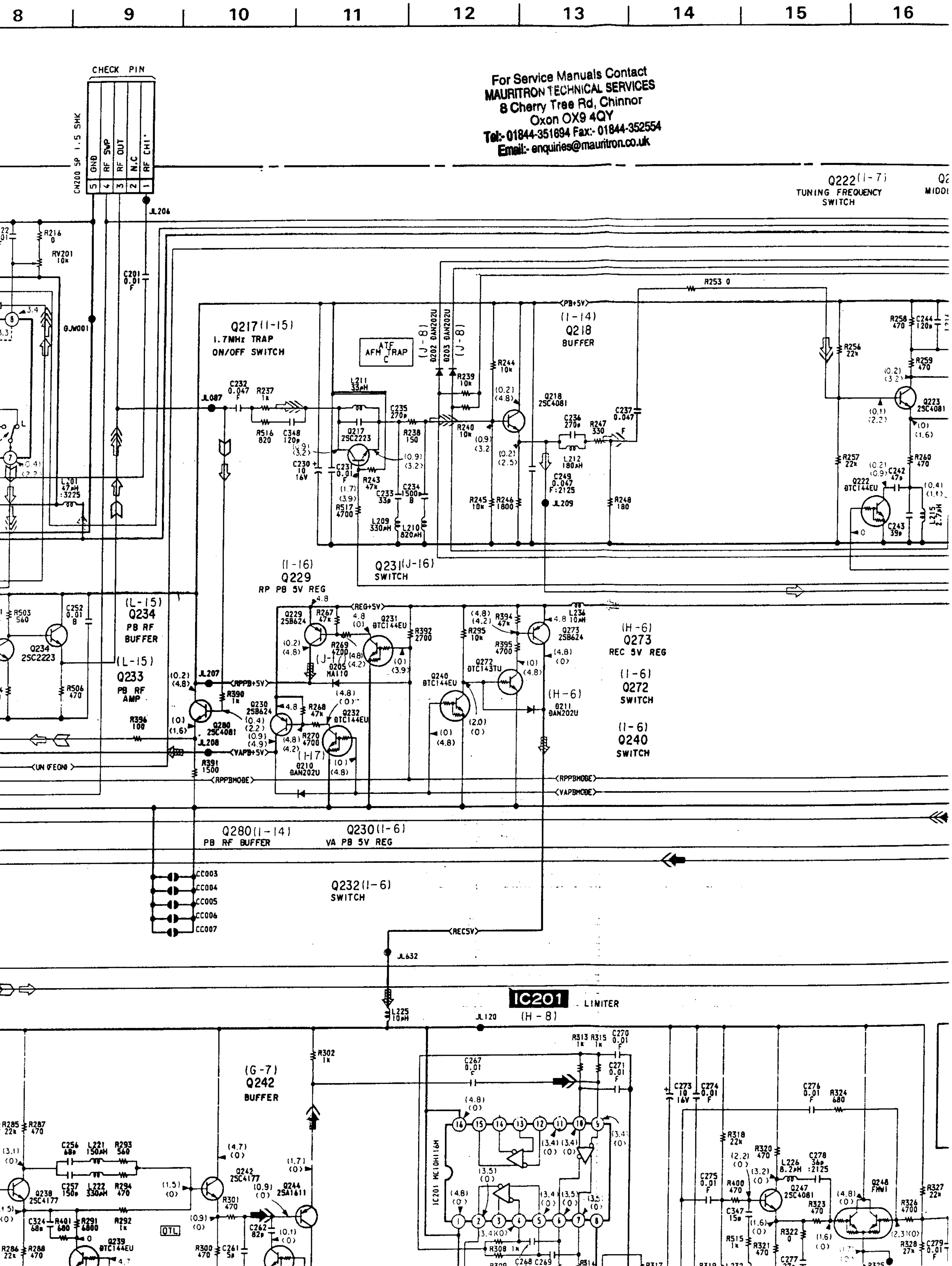
8
9
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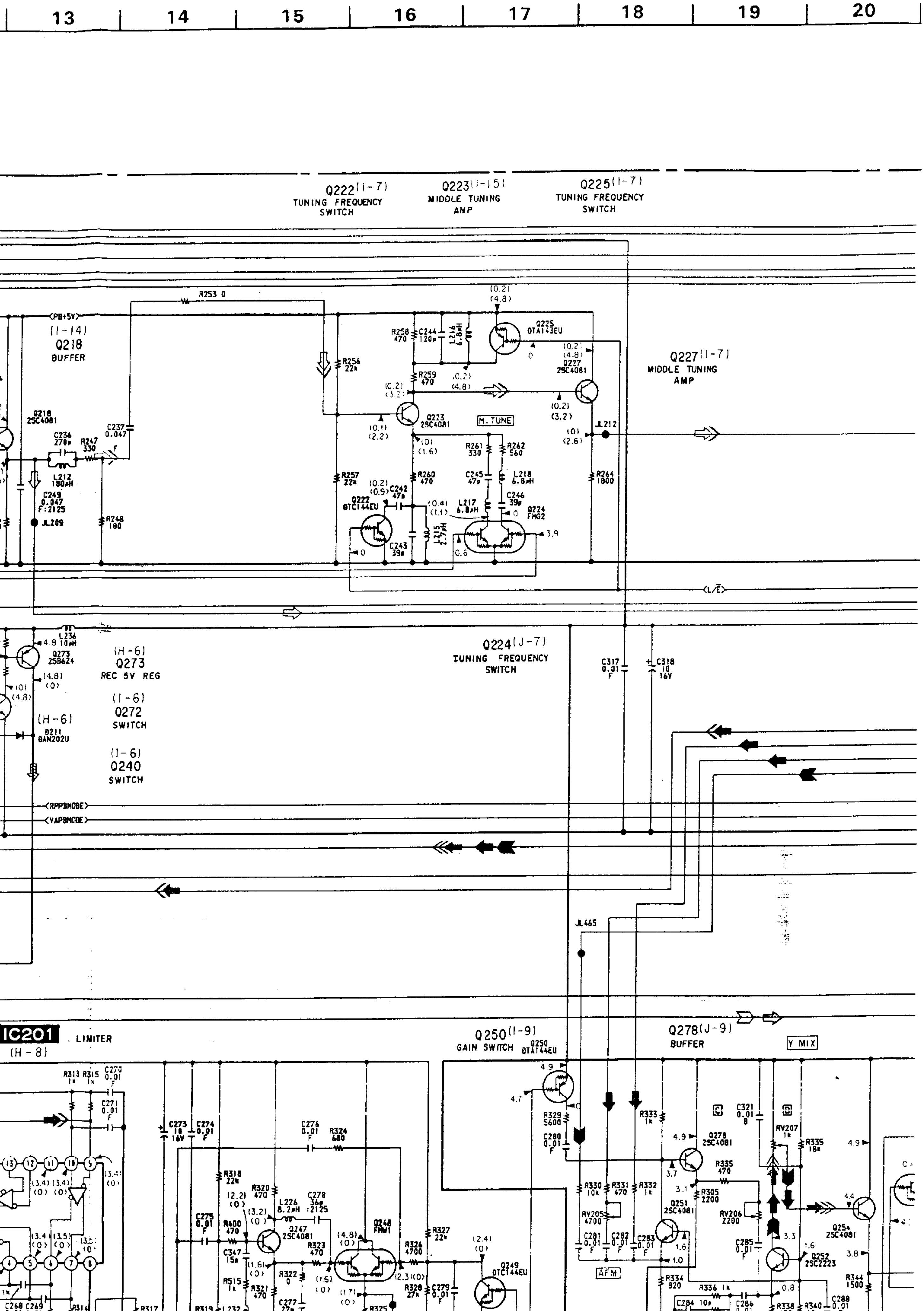
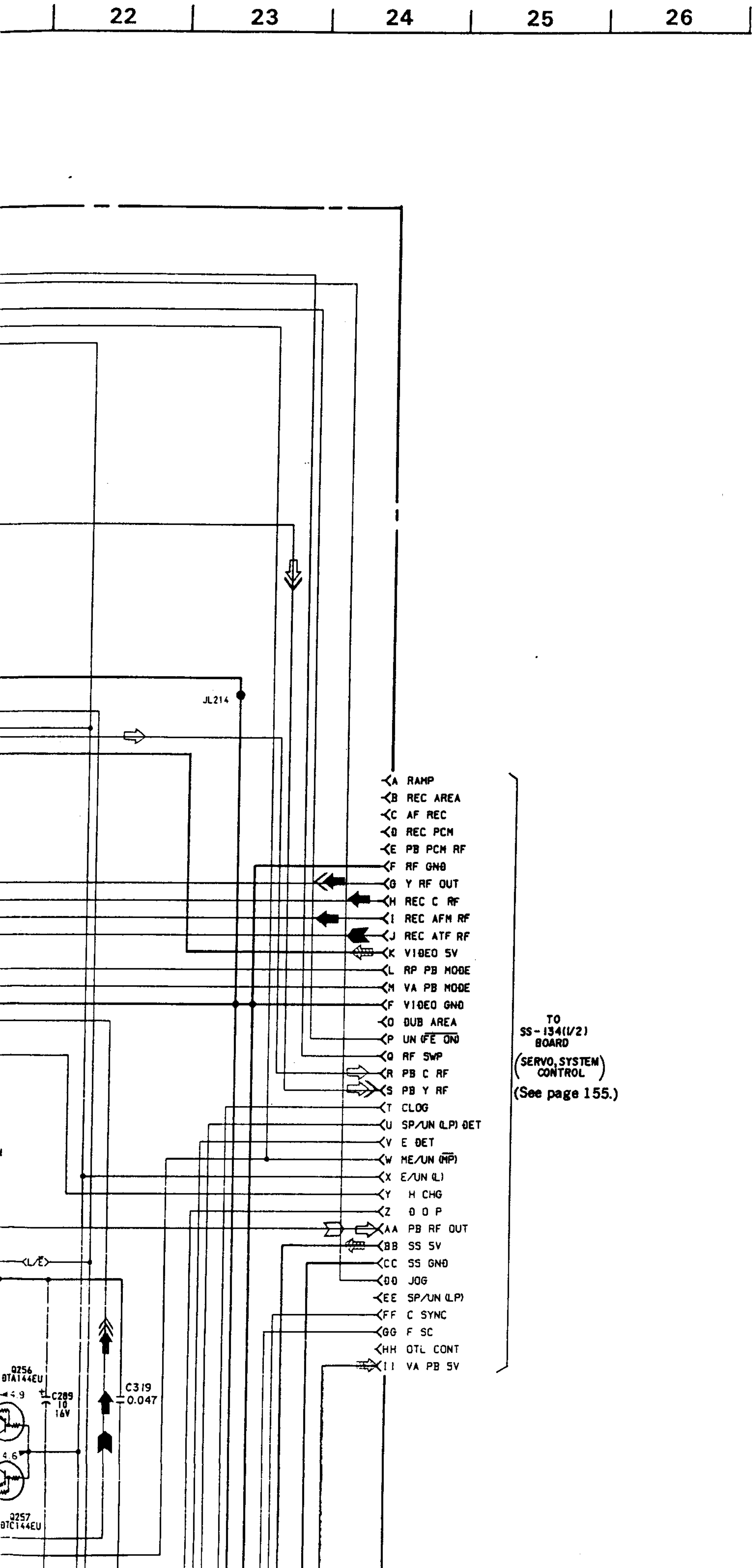
12
13
14
15
16
CHECK PIN
CN200 SP 1.5 SHK
GND
RF SWP
RF OUT
N.C
RF CH1
Q222(I-7)
TUNING FREQUENCY SWITCH
MIDDL
Q217(I-15)
1.7MHz TRAP
ON/OFF SWITCH
ATF AFM TRAP C
(J-8)
D202 DAN202U
D203 DAN202U
(I-14)
Q218
BUFFER
Q218 2SC4081
Q223 2SC4081
Q222 DTC144EU
R253 0
<PB+5V>
Q217 2SC2223
Q231(J-16)
SWITCH
(I-16)
Q229
RP PB 5V REG
Q229 2SB624
Q231 DTC144EU
<REG+5V>
Q273 2SB624
(H-6)
Q273
REC 5V REG
(I-6)
Q272
SWITCH
Q272 DTC143TU
Q240 DTC144EU
(I-6)
Q240
SWITCH
D211 DAN202U
(L-15)
Q234
PB RF BUFFER
Q234 2SC2223
(L-15)
Q233
PB RF AMP
Q280 2SC4081
Q230 2SB624
Q232 DTC144EU
D210 DAN202U
D205 MA110
<RPPB+5V>
<VAPB+5V>
<UN FEON>
<RPPBMODE>
<VAPBMODE>
Q280(I-14)
PB RF BUFFER
Q230(I-6)
VA PB 5V REG
Q232(I-6)
SWITCH
CC003
CC004
CC005
CC006
CC007
<RECSV>
JL632
L225 10μH
JL120
IC201
LIMITER
(H-8)
IC201 MC10H116M
(G-7)
Q242
BUFFER
Q242 2SC4177
Q244 2SA1611
Q238 2SC4177
Q239 DTC144EU
Q247 2SC4081
Q248 FMW1
QTL


13
14
15
16
17
18
19
20
Q222(I-7)
TUNING FREQUENCY
SWITCH
Q223(I-15)
MIDDLE TUNING
AMP
Q225(I-7)
TUNING FREQUENCY
SWITCH
R253 0
(PB+5V)
(I-14)
Q218
BUFFER
Q218
2SC4081
R258 470
C244 120p
L216 6.8μH
Q225
DTA143EU
R256 22k
R259 470
Q227
2SC4081
Q227(I-7)
MIDDLE TUNING
AMP
Q223
2SC4081
M. TUNE
JL212
C237 0.047
C236 270p
R247 330
L212 180μH
C249 0.047 F:2125
JL209
R248 180
R261 330
R262 560
R260 470
C245 47p
L218 6.8μH
R257 22k
C242 47p
C246 39p
Q222
DTC144EU
L217 6.8μH
Q224
FMG2
L215 2.7μH
C243 39p
R264 1800
(L/E)
L236 10μH
Q273
2SB624
(H-6)
Q273
REC 5V REG
(I-6)
Q272
SWITCH
(I-6)
Q240
SWITCH
D211
DAN202U
Q224(J-7)
TUNING FREQUENCY
SWITCH
C317 0.01 F
C318 10 16V
(RPPBMODE)
(VAPBMODE)
JL465
IC201
LIMITER
(H-8)
Q250(I-9)
GAIN SWITCH
Q250
DTA144EU
Q278(J-9)
BUFFER
Y MIX
R313 1k
R315 1k
C270 0.01 F
C271 0.01 F
C273 10 16V
C274 0.01 F
C276 0.01 F
R324 680
R318 22k
R320 470
L226 8.2μH
C278 36p :2125
C275 0.01 F
R400 470
Q247
2SC4081
R323 470
Q248
FMW1
R327 22k
C347 15p
R326 4700
R515 1k
R321 470
R322 0
C277 27p
R328 27k
C279 0.01 F
Q249
DTC144EU
R325
R319
R317
R314
C268
C269
R329 5600
C280 0.01 F
R333 1k
Q278
2SC4081
C321 0.01 B
RV207 1k
R335 18k
R335 470
R330 10k
R331 470
R332 1k
R305 2200
RV205 4700
Q251
2SC4081
RV206 2200
Q254
2SC4081
C281 0.01 F
C282 0.01 F
C283 0.01 F
C285 0.01 F
Q252
2SC2223
AFM
R334 820
R336 1k
C284 10p
C286 0.01
R338
R340
C288 0.01
R344 1500


22
23
24
25
26
JL214
A RAMP
B REC AREA
C AF REC
D REC PCM
E PB PCM RF
F RF GND
G Y RF OUT
H REC C RF
I REC AFM RF
J REC ATF RF
K VIDEO 5V
L RP PB MODE
M VA PB MODE
F VIDEO GND
O DUB AREA
P UN (FE ON)
Q RF SWP
R PB C RF
S PB Y RF
T CLOG
U SP/UN (LP) DET
V E DET
W ME/UN (MP)
X E/UN (L)
Y H CHG
Z D O P
AA PB RF OUT
BB SS 5V
CC SS GND
DD JOG
EE SP/UN (LP)
FF C SYNC
GG F SC
HH OTL CONT
II VA PB 5V
TO
SS-134(1/2)
BOARD
(SERVO, SYSTEM CONTROL)
(See page 155.)
(L/E)
Q256
DTA144EU
4.9
C289
10
16V
C319
0.047
4.6
Q257
DTC144EU

For Service Manuals Contact
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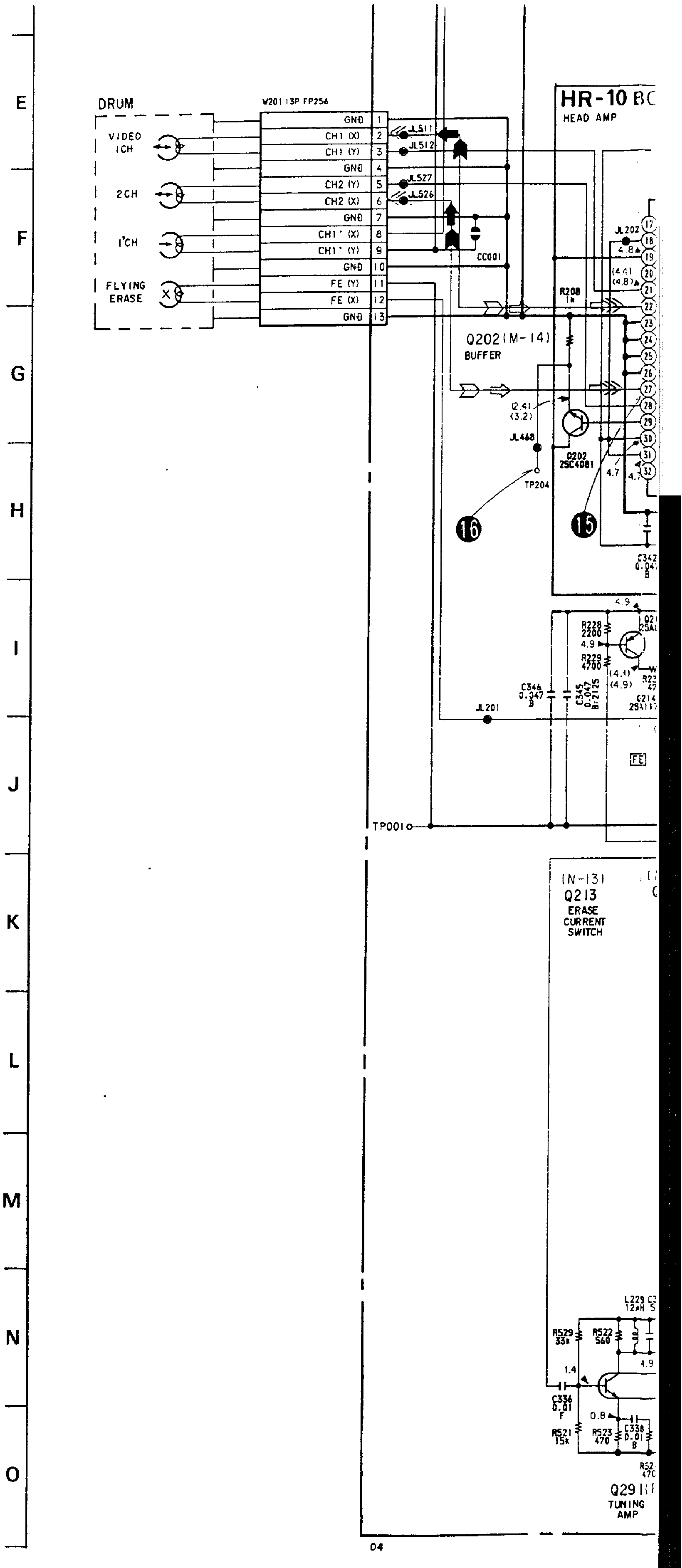
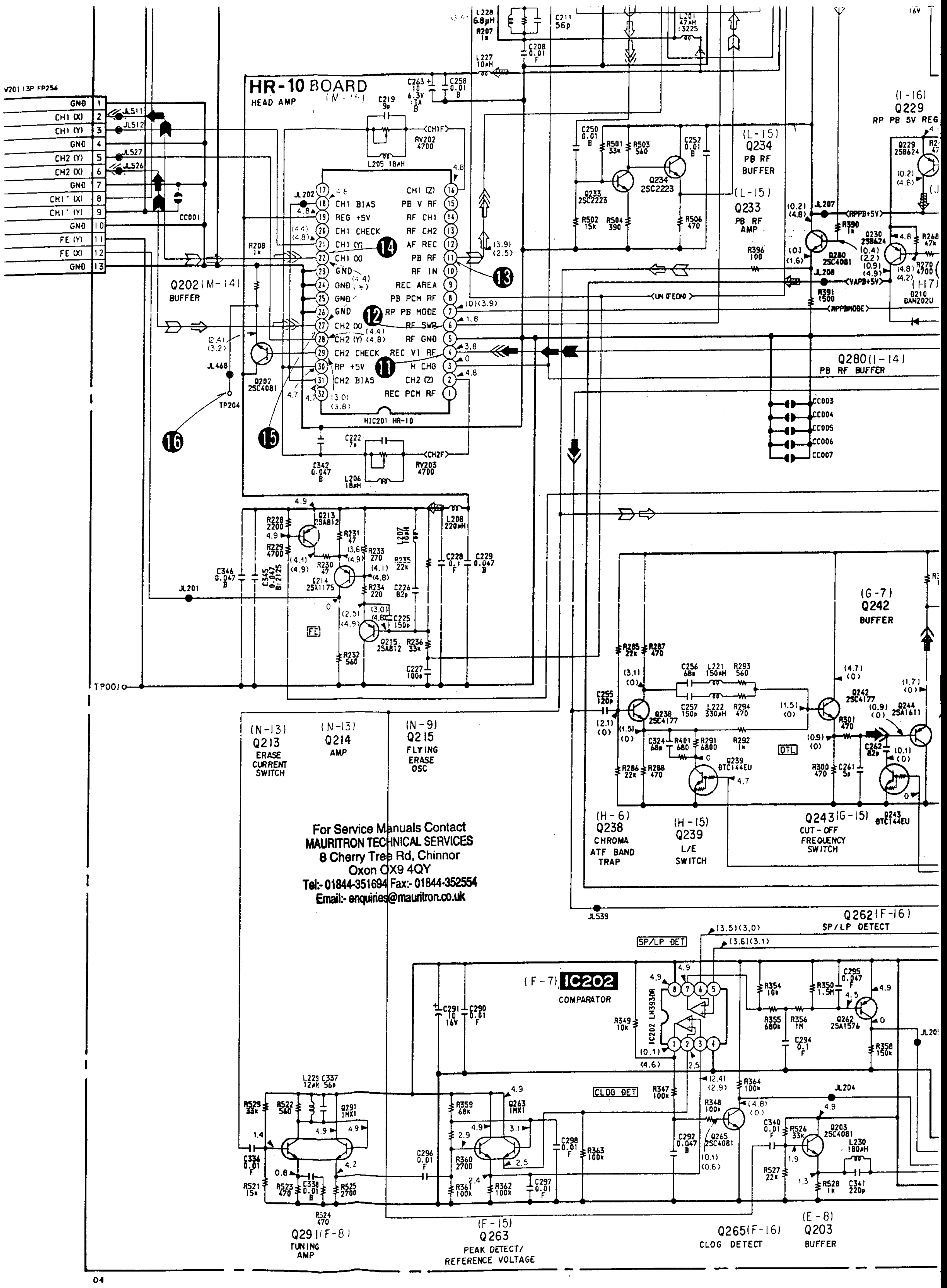

E
F
G
H
I
J
K
L
M
N
O
DRUM
VIDEO 1CH
2CH
1'CH
FLYING ERASE
V201 13P FP256
GND 1
CH1 (X) 2
CH1 (Y) 3
GND 4
CH2 (Y) 5
CH2 (X) 6
GND 7
CH1' (X) 8
CH1' (Y) 9
GND 10
FE (Y) 11
FE (X) 12
GND 13
JL511
JL512
JL527
JL526
CC001
HR-10 BC
HEAD AMP
JL202
4.8
(4.4)
(4.8)
R208 1k
Q202(M-14)
BUFFER
(2.4)
(3.2)
JL468
Q202 2SC4081
TP204
4.7
16
15
C342 0.047 B
4.9
R228 2200
4.9
R229 4700
(4.1)
(4.9)
C346 0.047 B
C345 0.047 B:2125
JL201
FE
TP001
(N-13)
Q213
ERASE CURRENT SWITCH
L229 12μH
R529 33k
R522 560
4.9
1.4
C336 0.01 F
R521 15k
0.8
R523 470
C338 0.01 B
Q291
TUNING AMP
04


HR-10 BOARD
HEAD AMP
V201 13P FP256
GND 1
CH1 (X) 2
CH1 (Y) 3
GND 4
CH2 (Y) 5
CH2 (X) 6
GND 7
CH1' (X) 8
CH1' (Y) 9
GND 10
FE (Y) 11
FE (X) 12
GND 13
CH1 BIAS 18
REG +5V 19
CH1 CHECK 20
CH1 (Y) 21
CH1 (X) 22
GND 23
GND 24
GND 25
GND 26
CH2 (X) 27
CH2 (Y) 28
CH2 CHECK 29
RP +5V 30
CH2 BIAS 31
CH1 (Z) 16
PB V RF 15
RF CH1 14
RF CH2 13
AF REC 12
PB RF 11
RF IN 10
REC AREA 9
PB PCM RF 8
RP PB MODE 7
RF SWP 6
RF GND 5
REC V1 RF 4
H CHG 3
CH2 (Z) 2
REC PCM RF 1
HIC201 HR-10
Q202 (M-14) BUFFER
Q202 2SC4081
TP204
TP001
Q229 (I-16) RP PB 5V REG
Q234 (L-15) PB RF BUFFER
Q233 (L-15) PB RF AMP
Q280 (I-14) PB RF BUFFER
Q230 2SB624
D210 DAN202U
Q213 (N-13) ERASE CURRENT SWITCH
Q214 (N-13) AMP
Q215 (N-9) FLYING ERASE OSC
Q242 (G-7) BUFFER
Q238 (H-6) CHROMA ATF BAND TRAP
Q239 (H-15) L/E SWITCH
Q243 (G-15) CUT-OFF FREQUENCY SWITCH
Q244 2SA1611
DTL
FE
IC202 (F-7) COMPARATOR
IC202 LM393DR
SP/LP DET
Q262 (F-16) SP/LP DETECT
Q262 2SA1576
CLOG DET
Q291 (F-8) TUNING AMP
Q263 (F-15) PEAK DETECT/ REFERENCE VOLTAGE
Q265 (F-16) CLOG DETECT
Q203 (E-8) BUFFER
Q203 2SC4081
11
12
13
14
15
16
04

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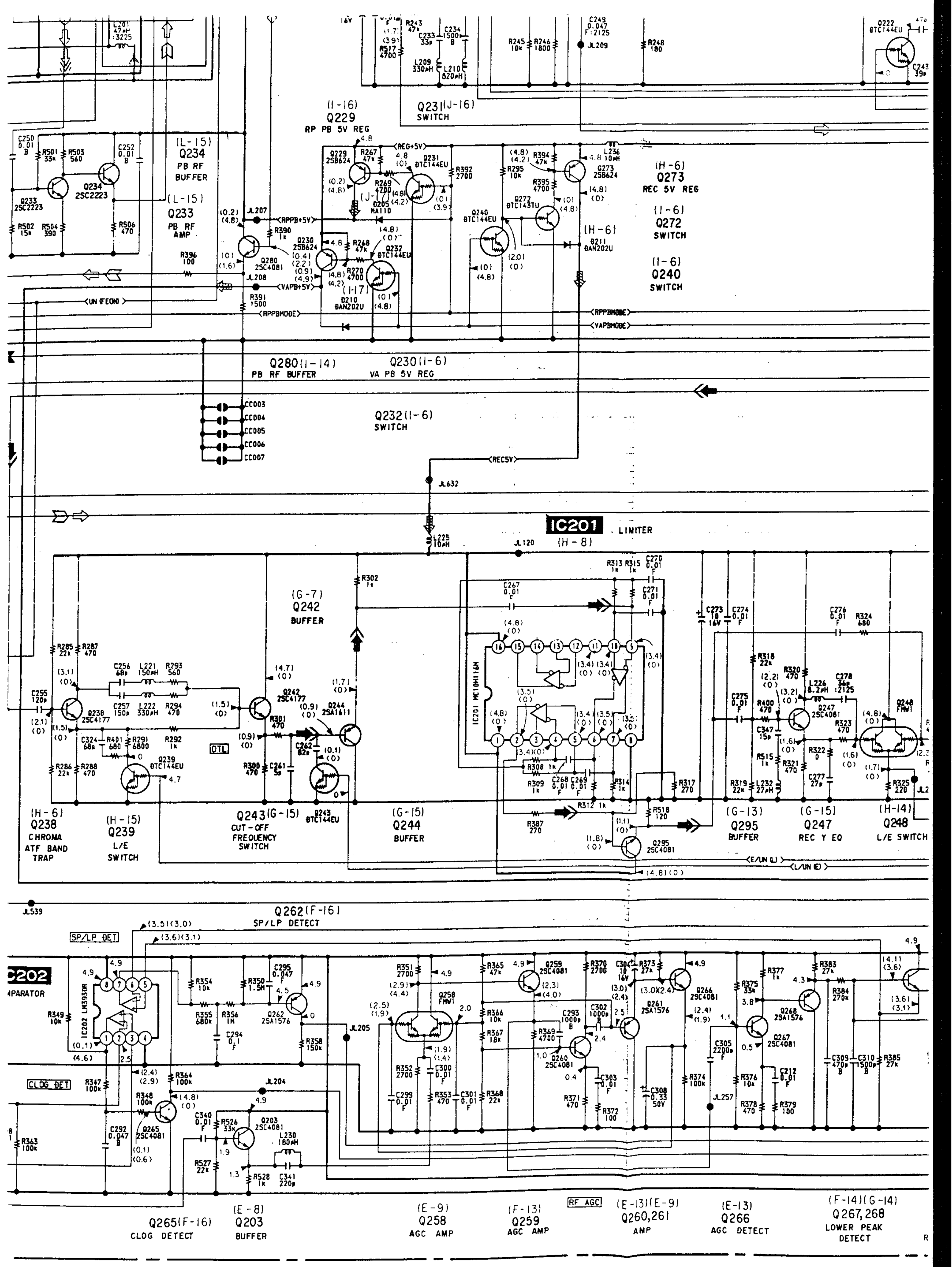
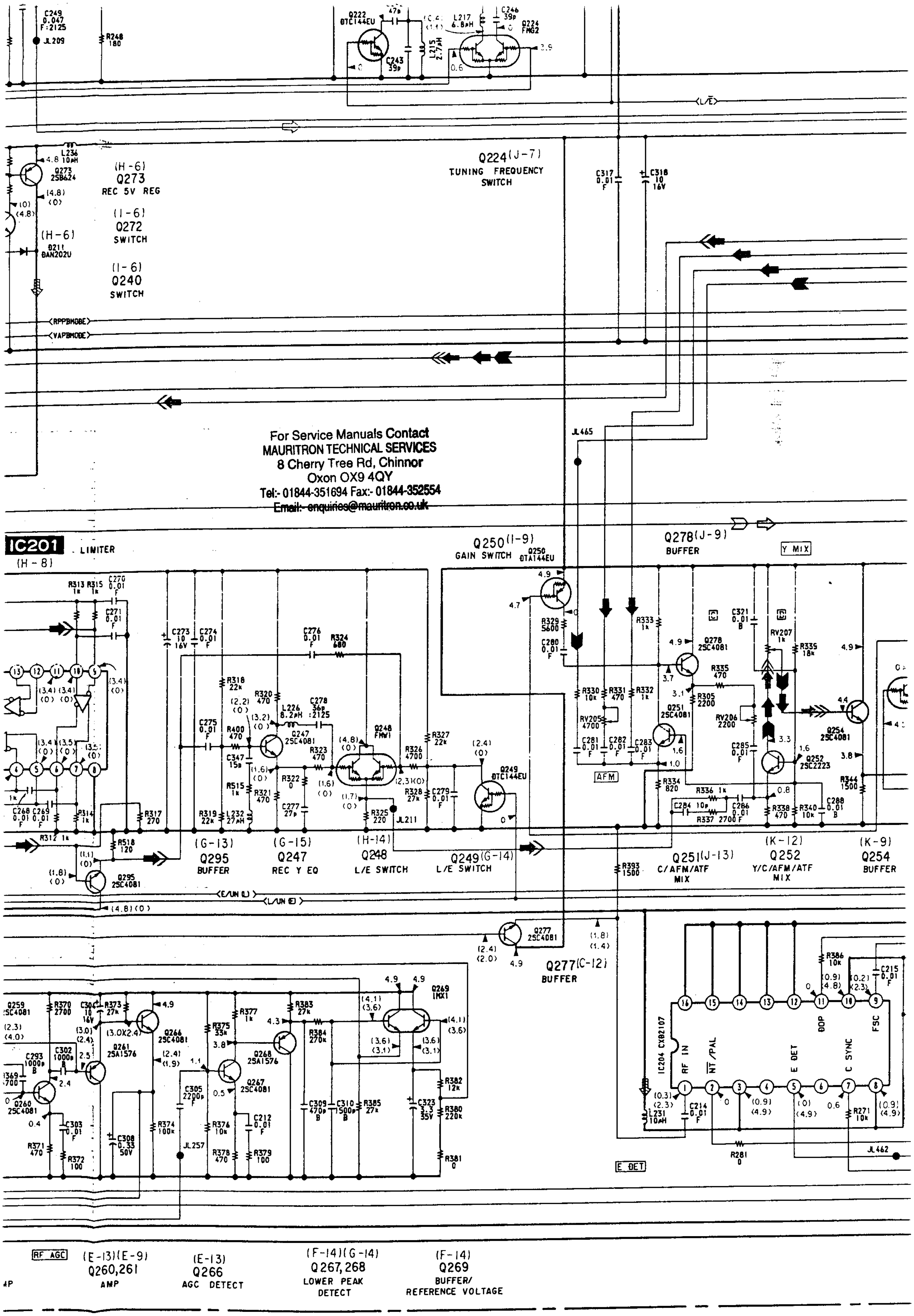

(I-16) Q229 RP PB 5V REG
Q231(J-16) SWITCH
(L-15) Q234 PB RF BUFFER
(L-15) Q233 PB RF AMP
(H-6) Q273 REC 5V REG
(I-6) Q272 SWITCH
(I-6) Q240 SWITCH
Q280(I-14) PB RF BUFFER
Q230(I-6) VA PB 5V REG
Q232(I-6) SWITCH
IC201 LIMITER (H-8)
(G-7) Q242 BUFFER
(H-6) Q238 CHROMA ATF BAND TRAP
(H-15) Q239 L/E SWITCH
Q243(G-15) CUT-OFF FREQUENCY SWITCH
(G-15) Q244 BUFFER
(G-13) Q295 BUFFER
(G-15) Q247 REC Y EQ
(H-14) Q248 L/E SWITCH
Q262(F-16) SP/LP DETECT
SP/LP DET
IC202
COMPARATOR
CLOG DET
Q265(F-16) CLOG DETECT
(E-8) Q203 BUFFER
(E-9) Q258 AGC AMP
(F-13) Q259 AGC AMP
RF AGC
(E-13)(E-9) Q260,261 AMP
(E-13) Q266 AGC DETECT
(F-14)(G-14) Q267,268 LOWER PEAK DETECT
RPPB+5V
VAPB+5V
REG+5V
UN (FEON)
RPPBMODE
VAPBMODE
RECSV
E/UN (L)
L/UN (E)
CC003
CC004
CC005
CC006
CC007
JL207
JL208
JL209
JL632
JL120
JL539
JL205
JL204
JL257
OTL



C249 0.047 F:2125
JL209
R248 180
Q222 DTC144EU
C243 39p
L215 2.7μH
L217 6.8μH
C246 39p
Q224 FMG2
<L/E>
L236 10μH
Q273 2SB624
(H-6) Q273 REC 5V REG
(I-6) Q272 SWITCH
(I-6) Q240 SWITCH
(H-6) D211 DAN202U
Q224(J-7) TUNING FREQUENCY SWITCH
C317 0.01 F
C318 10 16V
<RPPBMODE>
<VAPBMODE>
JL465
IC201 LIMITER (H-8)
R313 1k
R315 1k
C270 0.01 F
C271 0.01 F
C273 10 16V
C274 0.01 F
C276 0.01 F
R324 680
R318 22k
R320 470
L226 8.2μH
C278 36p :2125
C275 0.01 F
R400 470
Q247 2SC4081
Q248 FMW1
R327 22k
R326 4700
R323 470
C347 15p
R515 1k
R321 470
R322 0
C277 27p
R325 220
JL211
R328 27k
C279 0.01 F
Q249 DTC144EU
R319 22k
L232 27μH
C268 0.01 F
C269 0.01 F
R314 1k
R317 270
R312 1k
R518 120
Q295 2SC4081
(G-13) Q295 BUFFER
(G-15) Q247 REC Y EQ
(H-14) Q248 L/E SWITCH
Q249(G-14) L/E SWITCH
<E/UN E>
<L/UN E>
Q250(I-9) GAIN SWITCH
Q250 DTA144EU
R329 5600
C280 0.01 F
Q278(J-9) BUFFER
Y MIX
R333 1k
Q278 2SC4081
C321 0.01 B
RV207 1k
R339 18k
R335 470
R330 10k
R331 470
R332 1k
RV205 4700
R305 2200
Q251 2SC4081
RV206 2200
C281 0.01 F
C282 0.01 F
C283 0.01 F
C285 0.01 F
Q254 2SC4081
Q252 2SC2223
AFM
R334 820
R336 1k
C284 10p
C286 0.01
R337 2700 F
R338 470
R340 10k
C288 0.01 B
R344 1500
R393 1500
Q251(J-13) C/AFM/ATF MIX
(K-12) Q252 Y/C/AFM/ATF MIX
(K-9) Q254 BUFFER
Q277 2SC4081
Q277(C-12) BUFFER
R386 10k
C215 0.01 F
IC204 CX82107
RF IN
NT/PAL
E DET
DOP
C SYNC
FSC
L231 10μH
C214 0.01 F
R271 10k
R281 0
JL462
E DET
Q259 2SC4081
R370 2700
C304 10 16V
R373 27k
Q266 2SC4081
Q261 2SA1576
C293 1000p B
C302 1000p B
R369 4700
Q260 2SC4081
C303 0.01 F
R371 470
R372 100
C308 0.33 50V
R374 100k
C305 2200p F
JL257
R377 1k
R375 33k
Q268 2SA1576
Q267 2SC4081
R376 10k
R378 470
C212 0.01 F
R379 100
R383 27k
R384 270k
Q269 IMX1
C309 470p B
C310 1500p B
R385 27k
C323 3.3 35V
R382 12k
R380 220k
R381 0
RF AGC
(E-13)(E-9) Q260,261 AMP
(E-13) Q266 AGC DETECT
(F-14)(G-14) Q267,268 LOWER PEAK DETECT
(F-14) Q269 BUFFER/ REFERENCE VOLTAGE

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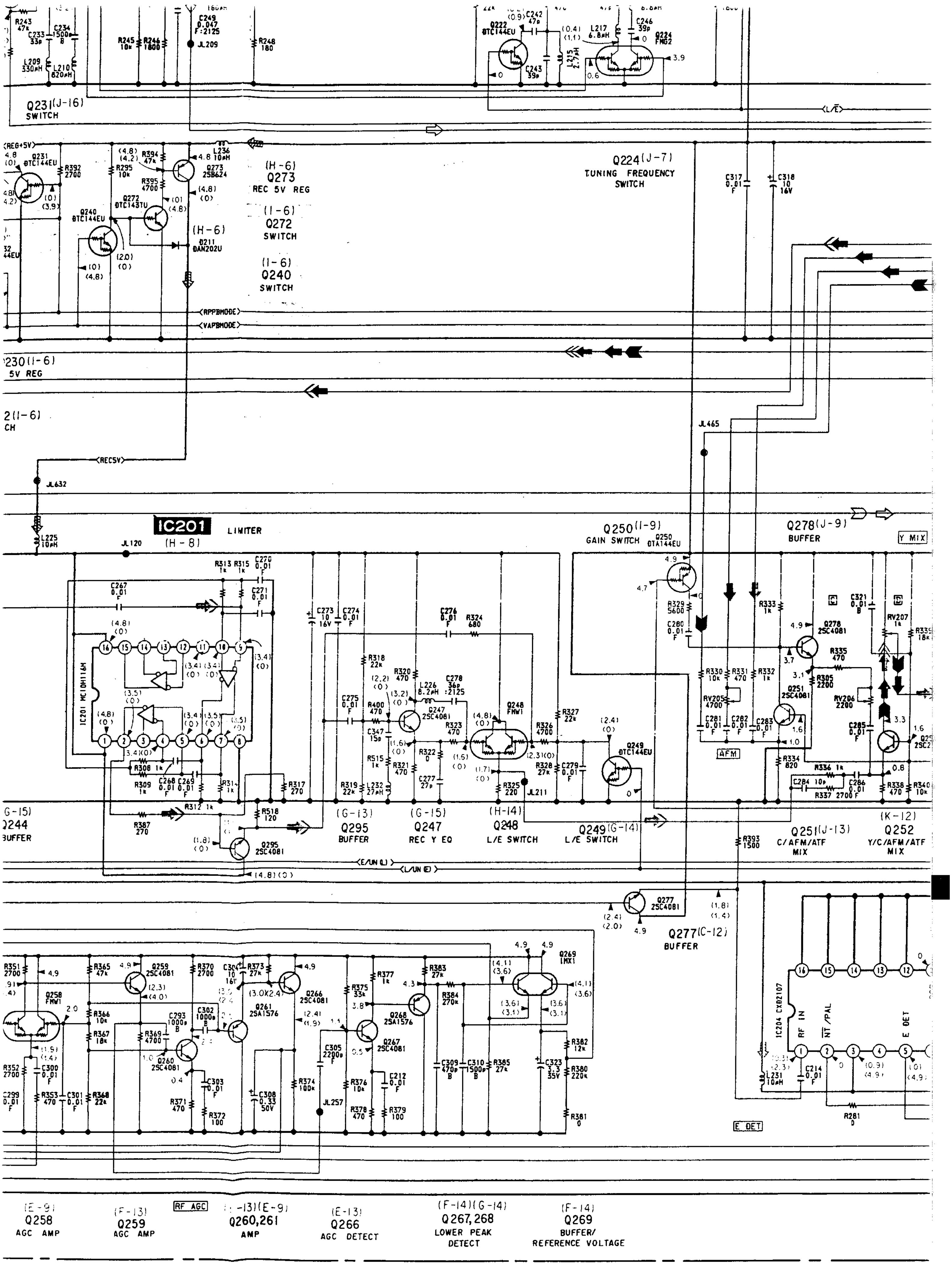
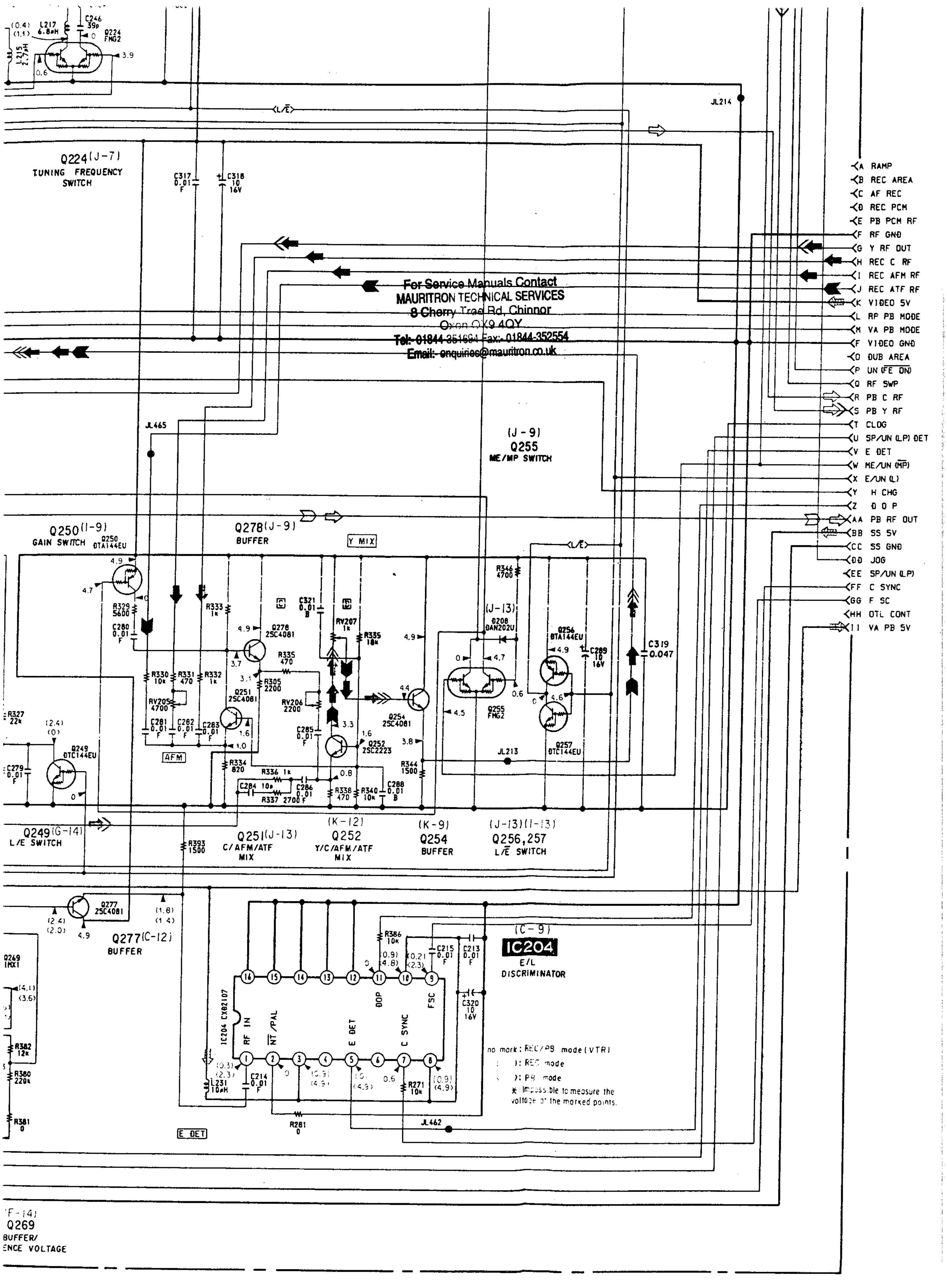

Q231(J-16)
SWITCH
Q224(J-7)
TUNING FREQUENCY
SWITCH
Q222 DTC144EU
Q224 FMG2
(H-6)
Q273
REC 5V REG
(I-6)
Q272
SWITCH
(I-6)
Q240
SWITCH
(H-6)
D211 DAN202U
Q273 2SB624
Q272 DTC143TU
Q240 DTC144EU
Q231 DTC144EU
(REG+5V)
(RPPBMODE)
(VAPBMODE)
Q230(I-6)
5V REG
2(I-6)
CH
(REC5V)
JL632
JL465
L225 10µH
IC201
LIMITER
(H-8)
IC201 MC10H116M
Q250(I-9)
GAIN SWITCH
Q250 DTA144EU
Q278(J-9)
BUFFER
Q278 2SC4081
Y MIX
AFM
(G-15)
Q244
BUFFER
(G-13)
Q295
BUFFER
(G-15)
Q247
REC Y EQ
(H-14)
Q248
L/E SWITCH
Q249(G-14)
L/E SWITCH
Q251(J-13)
C/AFM/ATF
MIX
(K-12)
Q252
Y/C/AFM/ATF
MIX
Q295 2SC4081
Q247 2SC4081
Q248 FMW1
Q249 DTC144EU
Q251 2SC4081
(E/UN (L))
(L/UN (E))
Q277 2SC4081
Q277(C-12)
BUFFER
IC204 CXB2107
RF IN
NT/PAL
E DET
E DET
Q258 FMW1
Q259 2SC4081
Q260 2SC4081
Q261 2SA1576
Q266 2SC4081
Q267 2SC4081
Q268 2SA1576
Q269 IMX1
JL257
(E-9)
Q258
AGC AMP
(F-13)
Q259
AGC AMP
RF AGC
(F-13)(E-9)
Q260,261
AMP
(E-13)
Q266
AGC DETECT
(F-14)(G-14)
Q267,268
LOWER PEAK
DETECT
(F-14)
Q269
BUFFER/
REFERENCE VOLTAGE


Q224(J-7)
TUNING FREQUENCY SWITCH
L217 6.8μH
C246 39p
Q224 FMG2
L215 2.7μH
JL214
C317 0.01 F
C318 10 16V
(L/E)
A RAMP
B REC AREA
C AF REC
D REC PCM
E PB PCM RF
F RF GND
G Y RF OUT
H REC C RF
I REC AFM RF
J REC ATF RF
K VIDEO 5V
L RP PB MODE
M VA PB MODE
F VIDEO GND
O DUB AREA
P UN (FE ON)
Q RF SWP
R PB C RF
S PB Y RF
T CLOG
U SP/UN (LP) DET
V E DET
W ME/UN (MP)
X E/UN (L)
Y H CHG
Z D O P
AA PB RF OUT
BB SS 5V
CC SS GND
DD JOG
EE SP/UN (LP)
FF C SYNC
GG F SC
HH OTL CONT
II VA PB 5V
JL465
(J-9)
Q255
ME/MP SWITCH
Q250(I-9)
GAIN SWITCH
Q250 DTA144EU
Q278(J-9)
BUFFER
Y MIX
R329 5600
C280 0.01 F
R333 1k
C321 0.01 B
RV207 1k
R335 18k
Q278 2SC4081
R335 470
R305 2200
R330 10k
R331 470
R332 1k
RV205 4700
Q251 2SC4081
RV206 2200
C281 0.01 F
C282 0.01 F
C283 0.01 F
C285 0.01 F
Q254 2SC4081
Q252 2SC2223
AFM
R327 22k
C279 0.01 F
Q249 DTC144EU
R334 820
R336 1k
C284 10p
R337 2700 F
C286 0.01
R338 470
R340 10k
C288 0.01 B
R344 1500
R346 4700
(J-13)
D208 DAN202U
Q256 DTA144EU
C289 10 16V
C319 0.047
Q255 FMG2
JL213
Q257 DTC144EU
Q249(G-14)
L/E SWITCH
R393 1500
Q251(J-13)
C/AFM/ATF MIX
(K-12)
Q252
Y/C/AFM/ATF MIX
(K-9)
Q254
BUFFER
(J-13)(I-13)
Q256,257
L/E SWITCH
Q277 2SC4081
Q277(C-12)
BUFFER
Q269 (MX1)
R382 12k
R380 220k
R381 0
R386 10k
C215 0.01 F
C213 0.01 F
(C-9)
IC204
E/L DISCRIMINATOR
C320 10 16V
IC204 CXB2107
RF IN
NT/PAL
E DET
DOP
C SYNC
FSC
L231 10μH
C214 0.01 F
R271 10k
R281 0
JL462
E DET
no mark: REC/PB mode (VTR)
( ): REC mode
( ): PB mode
✱: Impossible to measure the voltage of the marked points.
(F-14)
Q269
BUFFER/
ENCE VOLTAGE

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VA-64 (VIDEO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-64 BOARD : 3000 series—

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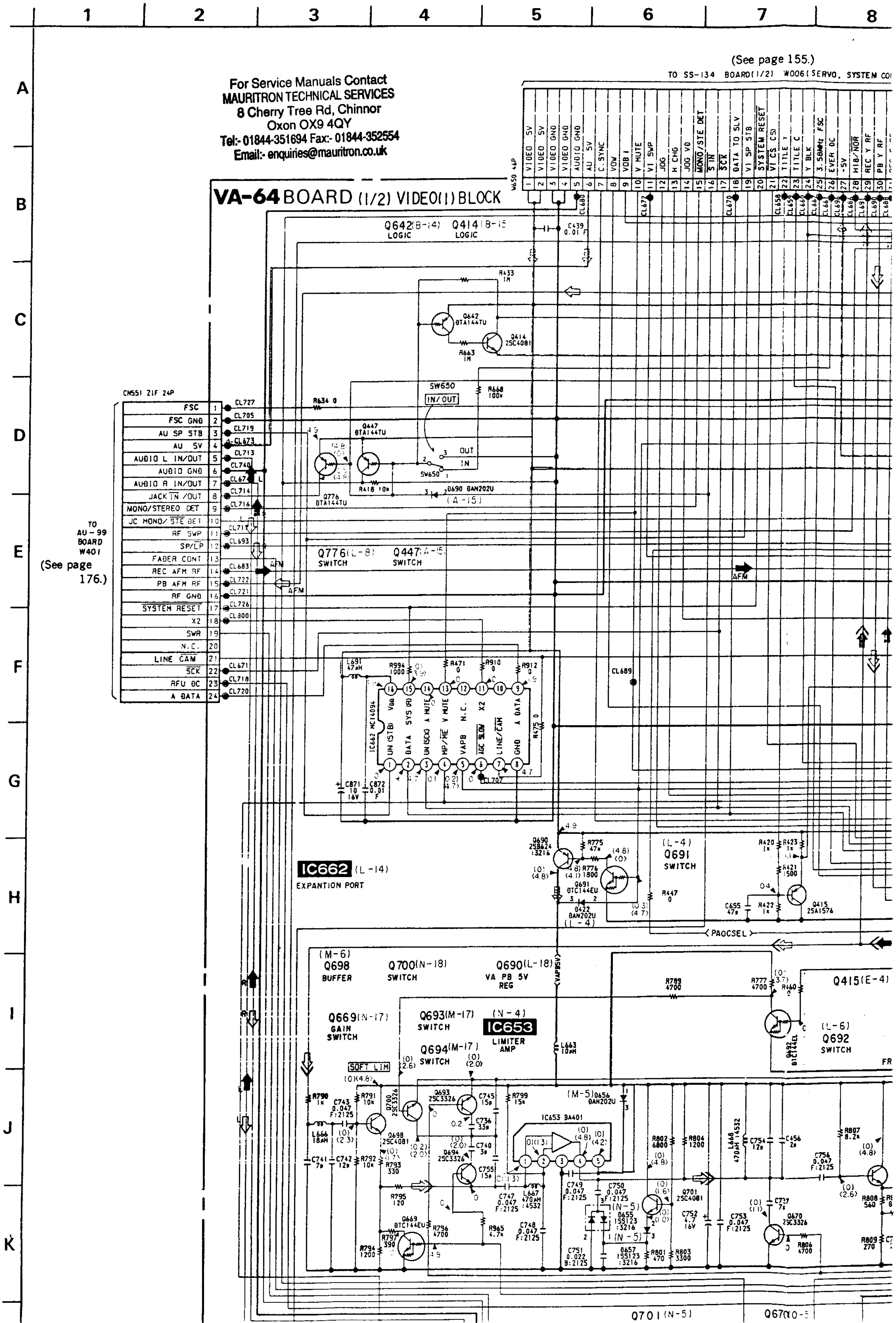
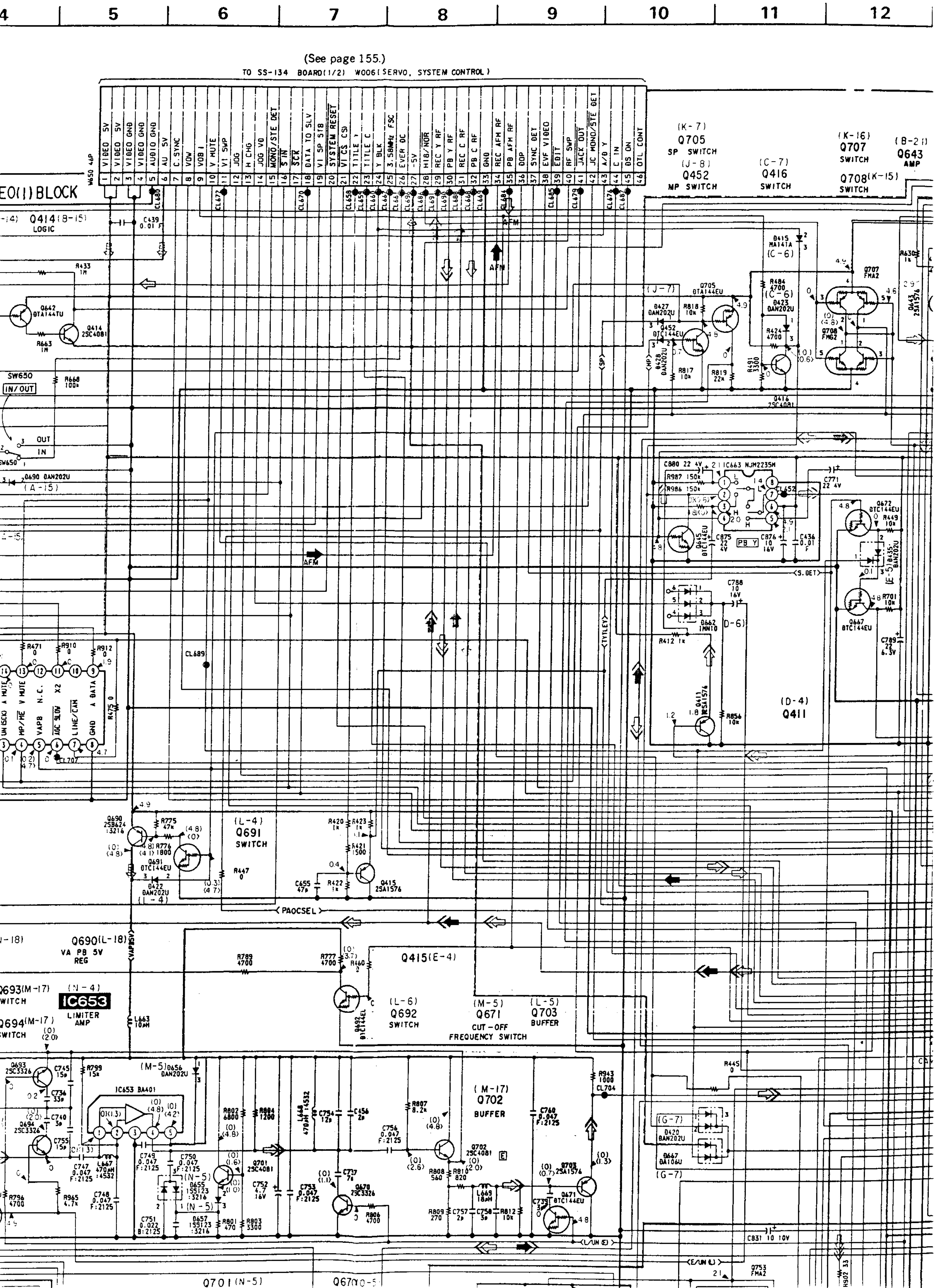

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
(See page 155.)
TO SS-134 BOARD(1/2) W006(SERVO, SYSTEM CO
W650 46P
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C SYNC
8 VDW
9 VOB I
10 V MUTE
11 V1 SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 V1 SP STB
20 SYSTEM RESET
21 V1 CS CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HIB/NOR
29 REC Y RF
30 PB Y RF
VA-64 BOARD (1/2) VIDEO(1) BLOCK
Q642(B-14) LOGIC
Q414(B-15) LOGIC
C439 0.01 F
R433 1M
Q642 DTA144TU
Q414 2SC4081
R663 1M
SW650 IN/OUT
R668 100k
R634 0
Q447 DTA144TU
OUT
IN
SW650
R418 10k
Q776 DTA144TU
D690 DAN202U (A-15)
CN551 ZIF 24P
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN/OUT
6 AUDIO GND
7 AUDIO R IN/OUT
8 JACK IN / OUT
9 MONO/STEREO DET
10 JC MONO/STE DET
11 RF SWP
12 SP/LP
13 FADER CONT
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SYSTEM RESET
18 X2
19 SWR
20 N.C.
21 LINE CAM
22 SCK
23 RFU DC
24 A DATA
CL727
CL705
CL719
CL673
CL713
CL740
CL674
CL714
CL716
CL717
CL693
CL683
CL722
CL721
CL726
CL800
CL671
CL718
CL720
TO AU-99 BOARD W401
(See page 176.)
Q776(L-8) SWITCH
Q447(A-15) SWITCH
AFM
AFM
AFM
L691 47μH
R994 1000
R471 0
R910 0
R912 0
IC662 MC14094
VDD
SYS (R)
A MUTE
V MUTE
N.C.
X2
A DATA
UN (STB)
DATA
UN (SCK)
HP/ME
VAPB
AGC SLOW
LINE/CAM
GND
R475 0
C871 10 16V
C872 0.01 F
CL707
CL689
IC662 (L-14) EXPANTION PORT
Q690 2SB624 :3216
R775 47k
R776 1800
Q691 DTC144EU
D422 DAN202U (L-4)
(L-4) Q691 SWITCH
R447 0
R420 1k
R423 1k
R421 1500
C655 47p
R422 1k
Q415 2SA1576
PAOCSEL
(M-6) Q698 BUFFER
Q700(N-18) SWITCH
Q690(L-18) VA PB 5V REG
VAPB5V
R789 4700
R777 4700
R460 0
Q415(E-4)
Q669(N-17) GAIN SWITCH
Q693(M-17) SWITCH
(N-4) IC653 LIMITER AMP
Q694(M-17) SWITCH
L663 10μH
Q692 DTC144EL
(L-6) Q692 SWITCH
SOFT LIM
R790 1k
C743 0.047 F:2125
R791 10k
Q700 2SC3326
Q693 2SC3326
C745 15p
R799 15k
(M-5) D656 DAN202U
C736 33p
L666 18μH
Q698 2SC4081
C740 3p
Q694 2SC3326
IC653 BA401
C741 7p
C742 12p
R792 10k
R793 330
C755 15p
R795 120
Q669 DTC144EU
R797 390
R794 1200
R796 4700
R965 4.7k
C747 0.047 F:2125
L667 470μH :4532
C748 0.047 F:2125
C749 0.047 F:2125
C750 0.047 F:2125
C751 0.022 B:2125
D655 1SS123 :3216
(N-5)
D657 1SS123 :3216
R802 6800
R804 1200
Q701 2SC4081
R801 470
R803 3300
C752 4.7 16V
L668 470μH :4532
C754 12p
C456 2p
C753 0.047 F:2125
C737 7p
Q670 2SC3326
R806 4700
C756 0.047 F:2125
R807 8.2k
R808 560
R809 270
Q701(N-5)
Q670(O-5)

4
5
6
7
8
9
10
11
12
(See page 155.)
TO SS-134 BOARD(1/2) W006(SERVO, SYSTEM CONTROL)
W650 46P
1 VIDEO 5V
2 VIDEO 5V
3 VIDEO GND
4 VIDEO GND
5 AUDIO GND
6 AU 5V
7 C.SYNC
8 VOW
9 VOB I
10 V MUTE
11 V1 SWP
12 JOG
13 H CHG
14 JOG VO
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI SP S18
20 SYSTEM RESET
21 VI CS CSI
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HIB/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 BS ON
46 DTL CONT
EO(1) BLOCK
Q414(B-15) LOGIC
(K-7) Q705 SP SWITCH
(J-8) Q452 MP SWITCH
(C-7) Q416 SWITCH
(K-16) Q707 SWITCH
(B-21) Q643 AMP
Q708(K-15) SWITCH
AFM
SW650 IN/OUT
OUT
IN
D690 DAN202U (A-15)
IC663 NJM2235M
PB Y
(S.DET)
(D-4) Q411
(SP)
(MP)
(TYLEY)
CL689
(L-4) Q691 SWITCH
Q690(L-18) VA PB 5V REG
(VAPB5V)
(PAOCSEL)
Q415(E-4)
(L-6) Q692 SWITCH
(M-5) Q671 CUT-OFF FREQUENCY SWITCH
(L-5) Q703 BUFFER
Q693(M-17) SWITCH
(N-4) IC653 LIMITER AMP
Q694(M-17) SWITCH
IC653 BA401
(M-17) Q702 BUFFER
(G-7)
D420 DAN202U
D667 DA106U
(L/UN E)
(E/UN L)
C831 10 10V
Q701(N-5)
Q670(O-5)
Q753 FMA2

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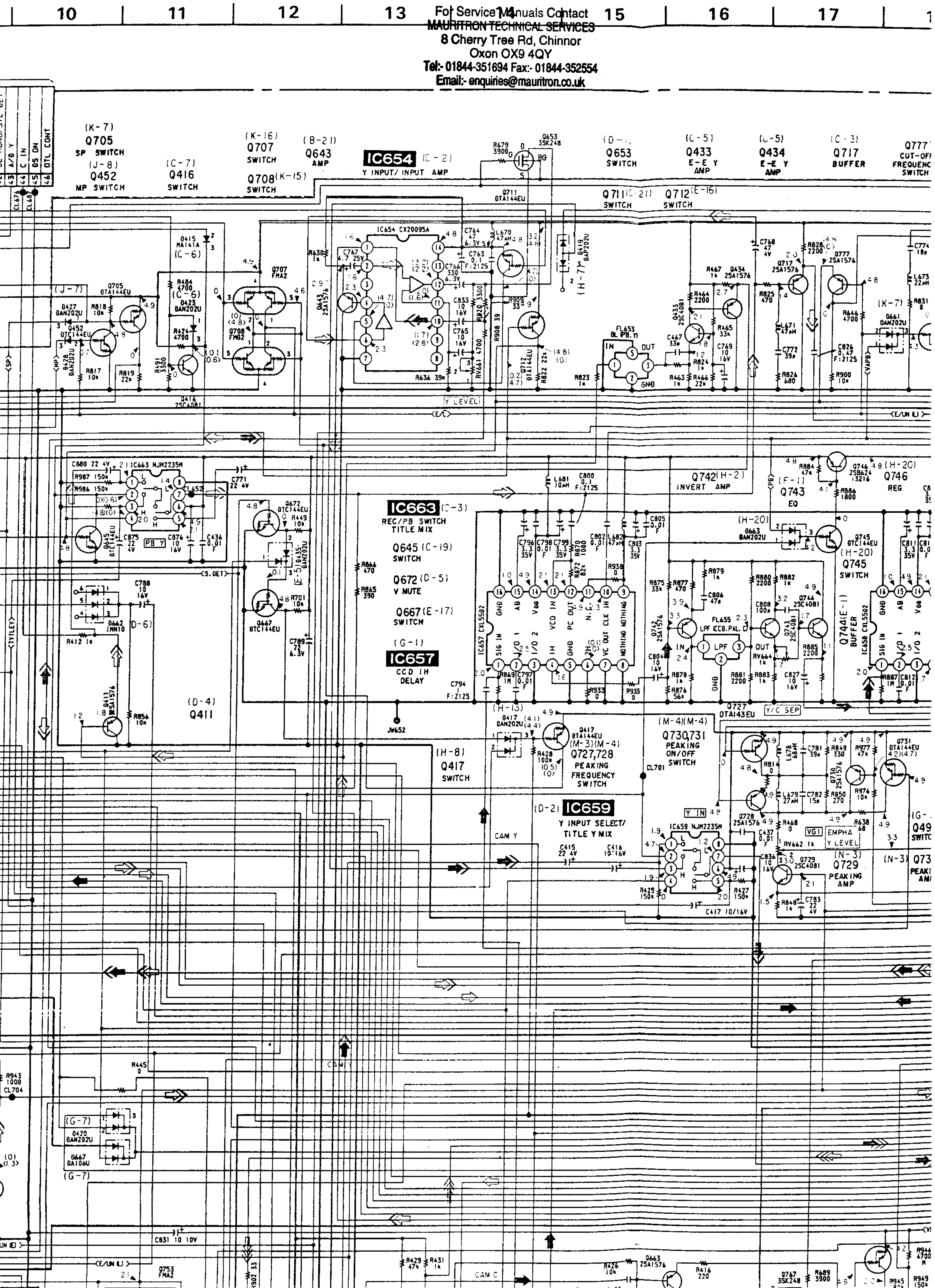
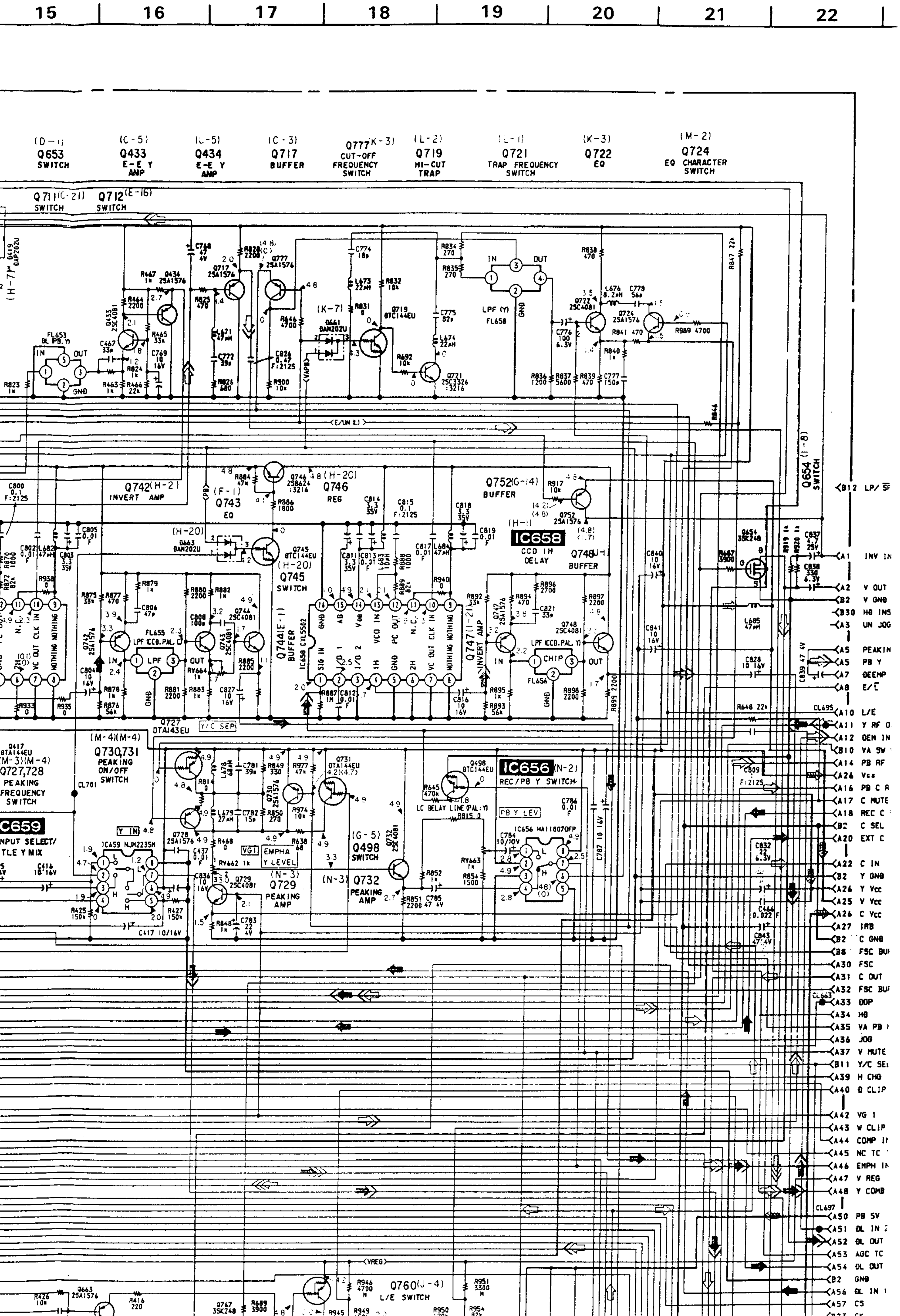

10
11
12
13
14
15
16
17
(K-7) Q705 SP SWITCH
(J-8) Q452 MP SWITCH
(C-7) Q416 SWITCH
(K-16) Q707 SWITCH
Q708 (K-15) SWITCH
(B-21) Q643 AMP
IC654 (C-2) Y INPUT/ INPUT AMP
IC654 CX20095A
Q653 3SK248
(D-) Q653 SWITCH
(C-5) Q433 E-E Y AMP
(C-5) Q434 E-E Y AMP
(C-3) Q717 BUFFER
Q777 CUT-OFF FREQUENCY SWITCH
Q711 (C-21) SWITCH
Q712 (E-16) SWITCH
Y LEVEL
FL653 BL (PB.Y)
IC663 NJM2235M
PB Y
S.DET
(E-5)
Q672 DTC144EU
Q667 DTC144EU
IC663 (C-3) REC/PB SWITCH TITLE MIX
Q645 (C-19) SWITCH
Q672 (D-5) V MUTE
Q667 (E-17) SWITCH
(G-1) IC657 CCD 1H DELAY
IC657 CXL5502
Q742 (H-2) INVERT AMP
(F-1) Q743 EQ
Q746 REG
(H-20) Q745 SWITCH
Q744 (E-1) BUFFER
IC658 CXL5502
FL655 LPF (CCD.PAL)
Y/C SEP
(D-4) Q411
(D-6)
(H-13) Q417 DAN202U
(H-8) Q417 SWITCH
(M-3)(M-4) Q727,728 PEAKING FREQUENCY SWITCH
(M-4)(M-4) Q730,731 PEAKING ON/OFF SWITCH
CL701
(D-2) IC659 Y INPUT SELECT/ TITLE Y MIX
IC659 NJM2235M
Y IN
VG1
EMPHA Y LEVEL
(N-3) Q729 PEAKING AMP
CAM Y
CAM C
(G-7) Q420 DAN202U
Q667 DA106U
(G-7)
R943 1000 CL704
C831 10 10V
Q753 FMA2
Q663 2SA1576
Q767 3SK248


15
16
17
18
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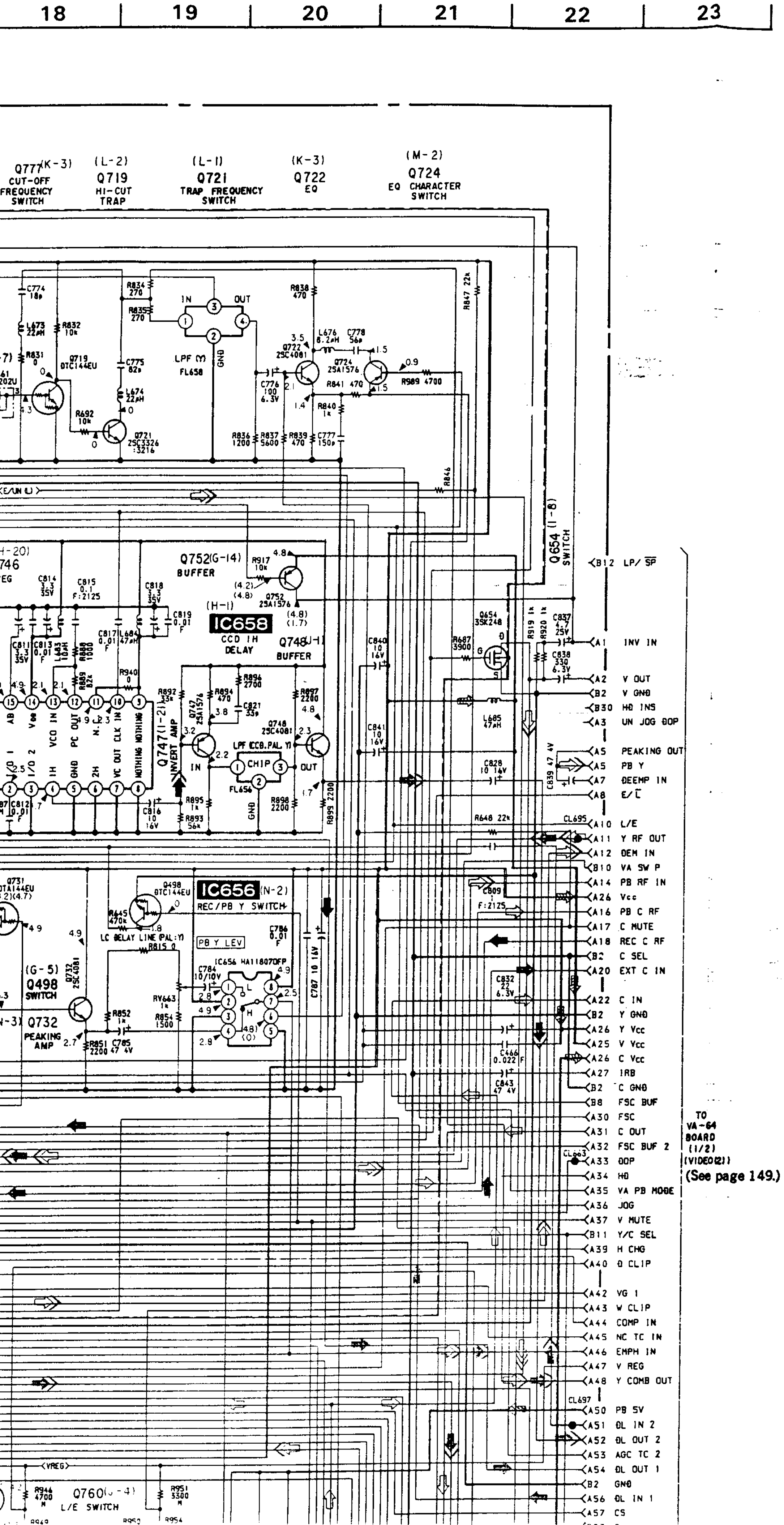
21
22
(D-1) Q653 SWITCH
(C-5) Q433 E-E Y AMP
(C-5) Q434 E-E Y AMP
(C-3) Q717 BUFFER
Q777(K-3) CUT-OFF FREQUENCY SWITCH
(L-2) Q719 HI-CUT TRAP
(L-1) Q721 TRAP FREQUENCY SWITCH
(K-3) Q722 EQ
(M-2) Q724 EQ CHARACTER SWITCH
Q711(C-21) SWITCH
Q712(E-16) SWITCH
FL653 DL (PB.Y)
LPF (Y) FL658
Q742(H-2) INVERT AMP
(F-1) Q743 EQ
Q746 4.8 (H-20) Q746 REG
Q752(G-14) BUFFER
Q654 (I-8) SWITCH
(H-20) D663 BAN202U
Q745 DTC144EU (H-20) Q745 SWITCH
(H-1) IC658 CCD 1H DELAY
Q748(J-1) BUFFER
Q744(E-1) BUFFER
IC658 CXL5502
Q747(I-21) INVERT AMP
FL655 LPF (CCB.PAL C)
LPF (CCB.PAL Y) FL656 CHIP
Q727 DTA143EU
Y/C SEP
(M-4)(M-4) Q730,731 PEAKING ON/OFF SWITCH
Q417 DTA144EU (M-3)(M-4) Q727,728 PEAKING FREQUENCY SWITCH
IC659 INPUT SELECT/ TITLE Y MIX
IC659 NJM2235M
Y IN
VG1
EMPHA Y LEVEL
(N-3) Q729 PEAKING AMP
(G-5) Q498 SWITCH
(N-3) Q732 PEAKING AMP
Q498 DTC144EU
IC656 (N-2) REC/PB Y SWITCH
IC656 HA11807OFP
LC DELAY LINE (PAL:Y)
PB Y LEV
CL701
<E/UN Q>
<VREG>
Q760(J-4) L/E SWITCH
Q663 2SA1576
Q767 3SK248
B12 LP/SP
A1 INV IN
A2 V OUT
B2 V GND
B30 HB INS
A3 UN JOG
A5 PEAKIN
A5 PB Y
A7 DEEMP
A8 E/L
CL695
A10 L/E
A11 Y RF O
A12 OEM IN
B10 VA SW
A14 PB RF
A26 Vcc
A16 PB C R
A17 C MUTE
A18 REC C
B2 C SEL
A20 EXT C
A22 C IN
B2 Y GND
A26 Y Vcc
A25 V Vcc
A26 C Vcc
A27 IRB
B2 C GND
B8 FSC BU
A30 FSC
A31 C OUT
A32 FSC BU
CL663
A33 DOP
A34 HB
A35 VA PB
A36 JOG
A37 V MUTE
B11 Y/C SE
A39 H CHG
A40 B CLIP
A42 VG 1
A43 W CLIP
A44 COMP I
A45 NC TC
A46 EMPH IN
A47 V REG
A48 Y COMB
CL697
A50 PB 5V
A51 DL IN 2
A52 DL OUT
A53 AGC TC
A54 DL OUT
B2 GND
A56 DL IN 1
A57 CS


18
19
20
21
22
23
Q777 (K-3) CUT-OFF FREQUENCY SWITCH
(L-2) Q719 HI-CUT TRAP
(L-1) Q721 TRAP FREQUENCY SWITCH
(K-3) Q722 EQ
(M-2) Q724 EQ CHARACTER SWITCH
LPF FL658
Q752 (G-14) BUFFER
IC658 (H-1) CCD 1H DELAY
Q748 (J-1) BUFFER
Q747 (I-12) INVERT AMP
LPF (CCB, PAL Y) CHIP FL656
Q654 (I-8) SWITCH
IC656 (N-2) REC/PB Y SWITCH
IC656 HA118070FP
PB Y LEV
LC DELAY LINE (PAL:Y)
(G-5) Q498 SWITCH
Q732 PEAKING AMP
Q760 L/E SWITCH
B12 LP/SP
A1 INV IN
A2 V OUT
B2 V GND
B30 HD INS
A3 UN JOG OOP
A5 PEAKING OUT
A5 PB Y
A7 DEEMP IN
A8 E/C
A10 L/E
A11 Y RF OUT
A12 DEM IN
B10 VA SW P
A14 PB RF IN
A26 Vcc
A16 PB C RF
A17 C MUTE
A18 REC C RF
B2 C SEL
A20 EXT C IN
A22 C IN
B2 Y GND
A26 Y Vcc
A25 V Vcc
A26 C Vcc
A27 IRB
B2 C GND
B8 FSC BUF
A30 FSC
A31 C OUT
A32 FSC BUF 2
A33 OOP
A34 HD
A35 VA PB MODE
A36 JOG
A37 V MUTE
B11 Y/C SEL
A39 H CHG
A40 D CLIP
A42 VG 1
A43 W CLIP
A44 COMP IN
A45 NC TC IN
A46 EMPH IN
A47 V REG
A48 Y COMB OUT
A50 PB 5V
A51 DL IN 2
A52 DL OUT 2
A53 AGC TC 2
A54 DL OUT 1
B2 GND
A56 DL IN 1
A57 CS
TO VA-64 BOARD (1/2) (VIDEO(2))
(See page 149.)

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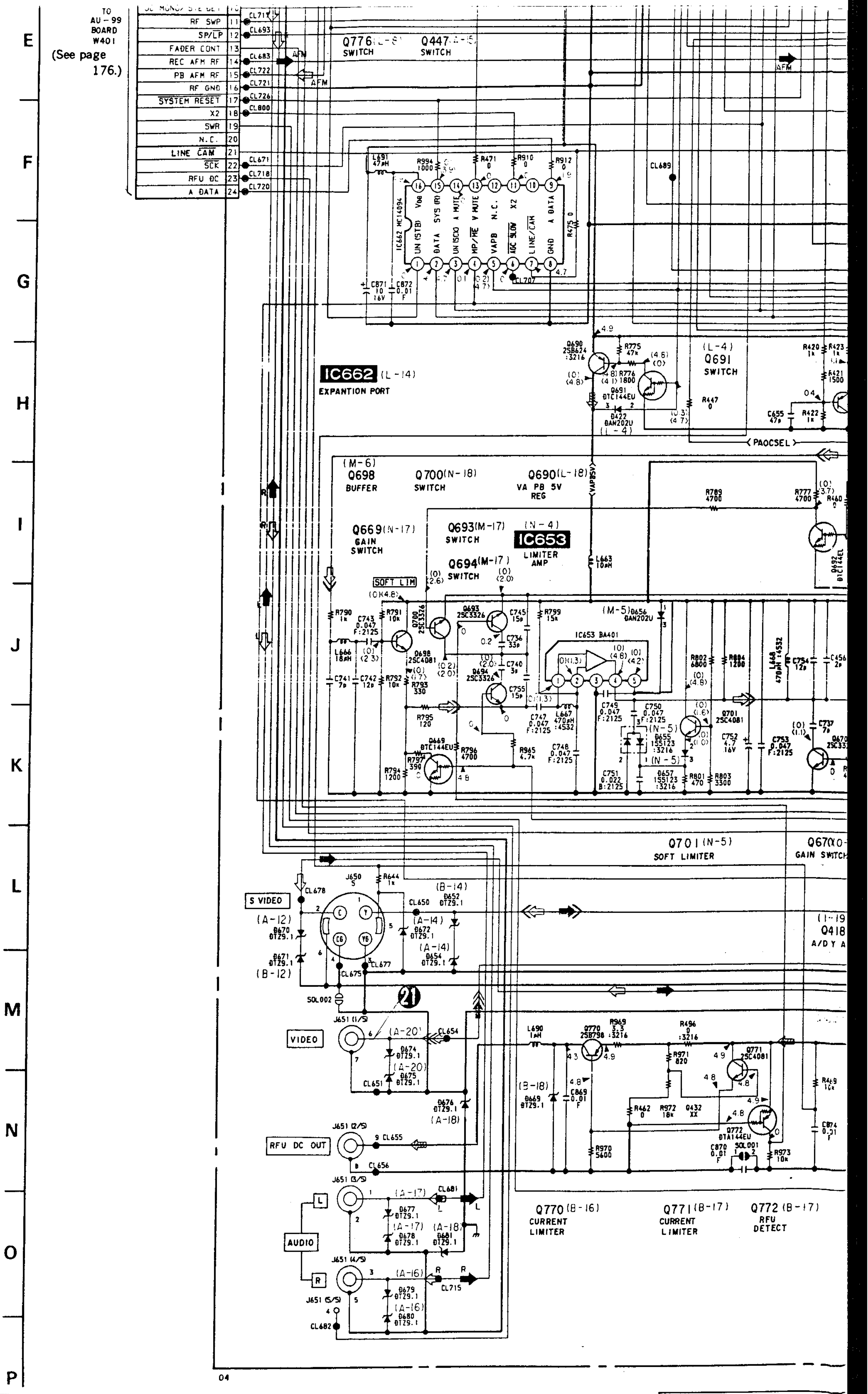
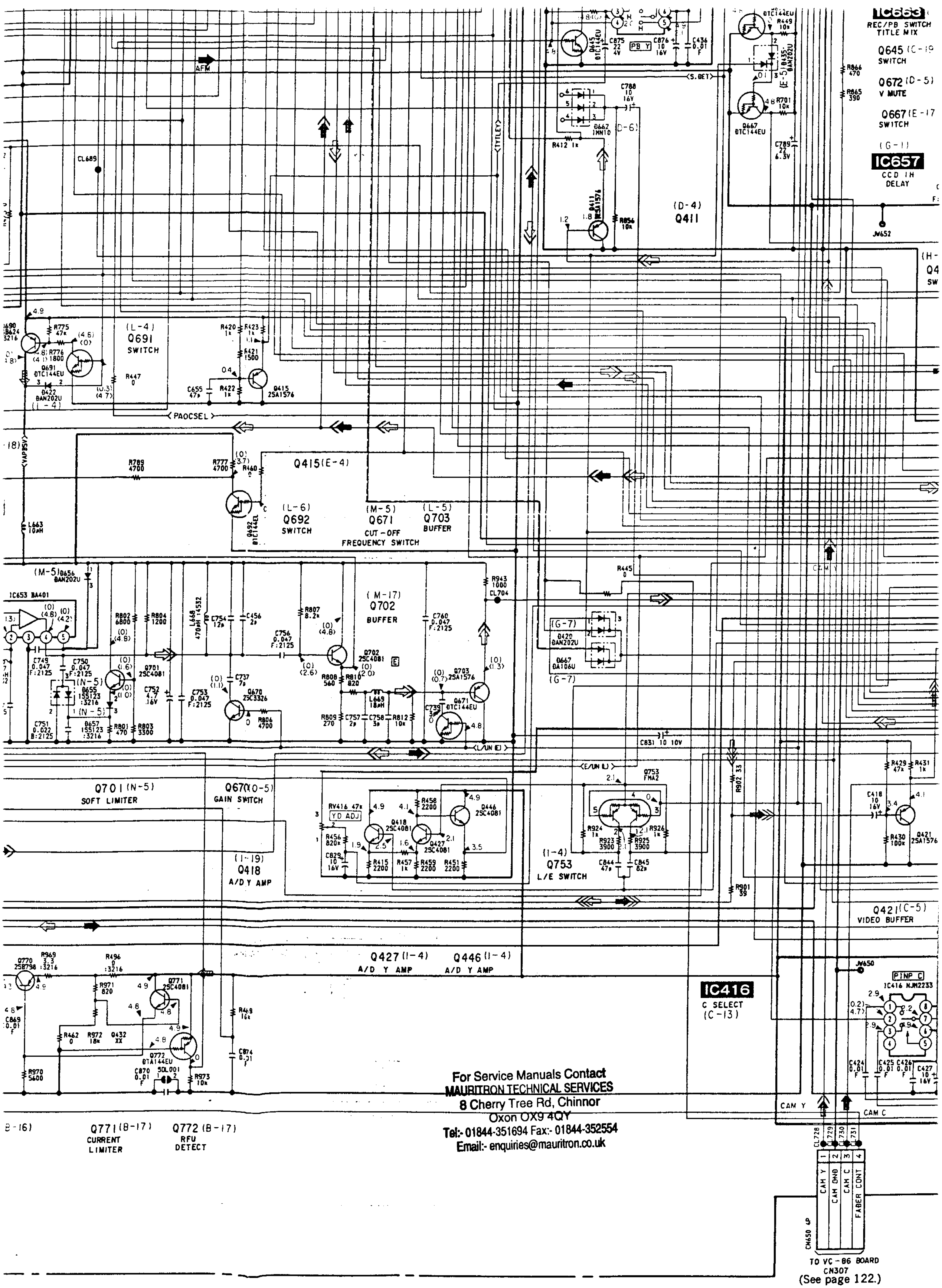


E
F
G
H
I
J
K
L
M
N
O
P
TO AU-99 BOARD W401
(See page 176.)
RF SWP 11
SP/LP 12
FADER CONT 13
REC AFM RF 14
PB AFM RF 15
RF GND 16
SYSTEM RESET 17
X2 18
SWR 19
N.C. 20
LINE CAM 21
SCK 22
RFU DC 23
A DATA 24
Q776 SWITCH
Q447 SWITCH
AFM
IC662 MC14094
VDD
SYS (R)
A MUTE
V MUTE
N.C.
X2
A DATA
UN (STB)
DATA
UN (SCK)
MP/ME
VAPB
AGC SLOW
LINE/CAM
GND
CL689
IC662 (L-14)
EXPANTION PORT
Q690 2SB624
Q691 DTC144EU
D422 DAN202U
(L-4) Q691 SWITCH
PAOCSEL
(M-6) Q698 BUFFER
Q700(N-18) SWITCH
Q690(L-18) VA PB 5V REG
VAPB5V
Q669(N-17) GAIN SWITCH
Q693(M-17) SWITCH
Q694(M-17) SWITCH
(N-4) IC653 LIMITER AMP
SOFT LIM
IC653 BA401
D656 DAN202U
Q701 2SC4081
Q669 DTC144EU
D655 1SS123
D657 1SS123
Q701 (N-5) SOFT LIMITER
Q670 GAIN SWITCH
S VIDEO
J650
CL678
CL650
CL675
CL677
SOL002
Q418 A/D Y A
VIDEO
J651 (1/5)
CL654
CL651
RFU DC OUT
J651 (2/5)
CL655
CL656
AUDIO
L
R
J651 (3/5)
J651 (4/5)
J651 (5/5)
CL681
CL715
CL682
Q770 2SB798
Q771 2SC4081
Q772 DTA144EU
SOL001
Q770 (B-16) CURRENT LIMITER
Q771 (B-17) CURRENT LIMITER
Q772 (B-17) RFU DETECT
21
04


IC663 REC/PB SWITCH TITLE MIX
Q645 (C-19) SWITCH
Q672 (D-5) V MUTE
Q667 (E-17) SWITCH
(G-11) IC657 CCD 1H DELAY
JW652
(D-4) Q411
AFM
CL689
<S.DET>
<YTYLEY>
(L-4) Q691 SWITCH
<PAOCSEL>
<YAPBSV>
Q415 (E-4)
(L-6) Q692 SWITCH
(M-5) Q671 CUT-OFF FREQUENCY SWITCH
(L-5) Q703 BUFFER
(M-17) Q702 BUFFER
IC653 BA401
(N-5)
(G-7)
CL704
CAM Y
<L/UN E>
<E/UN L>
Q701 (N-5) SOFT LIMITER
Q670 (O-5) GAIN SWITCH
(I-19) Q418 A/D Y AMP
RV416 47k YD ADJ
(I-4) Q753 L/E SWITCH
Q421 (C-5) VIDEO BUFFER
Q427 (I-4) A/D Y AMP
Q446 (I-4) A/D Y AMP
IC416 C SELECT (C-13)
JW650
PINP C
IC416 NJM2233
CAM Y
CAM C
CL728 CL729 CL730 CL731
1 CAM Y
2 CAM GND
3 CAM C
4 FABER CONT
CN650 4P
TO VC-86 BOARD CN307
(See page 122.)
(B-16)
Q771 (B-17) CURRENT LIMITER
Q772 (B-17) RFU DETECT

For Service Manuals Contact
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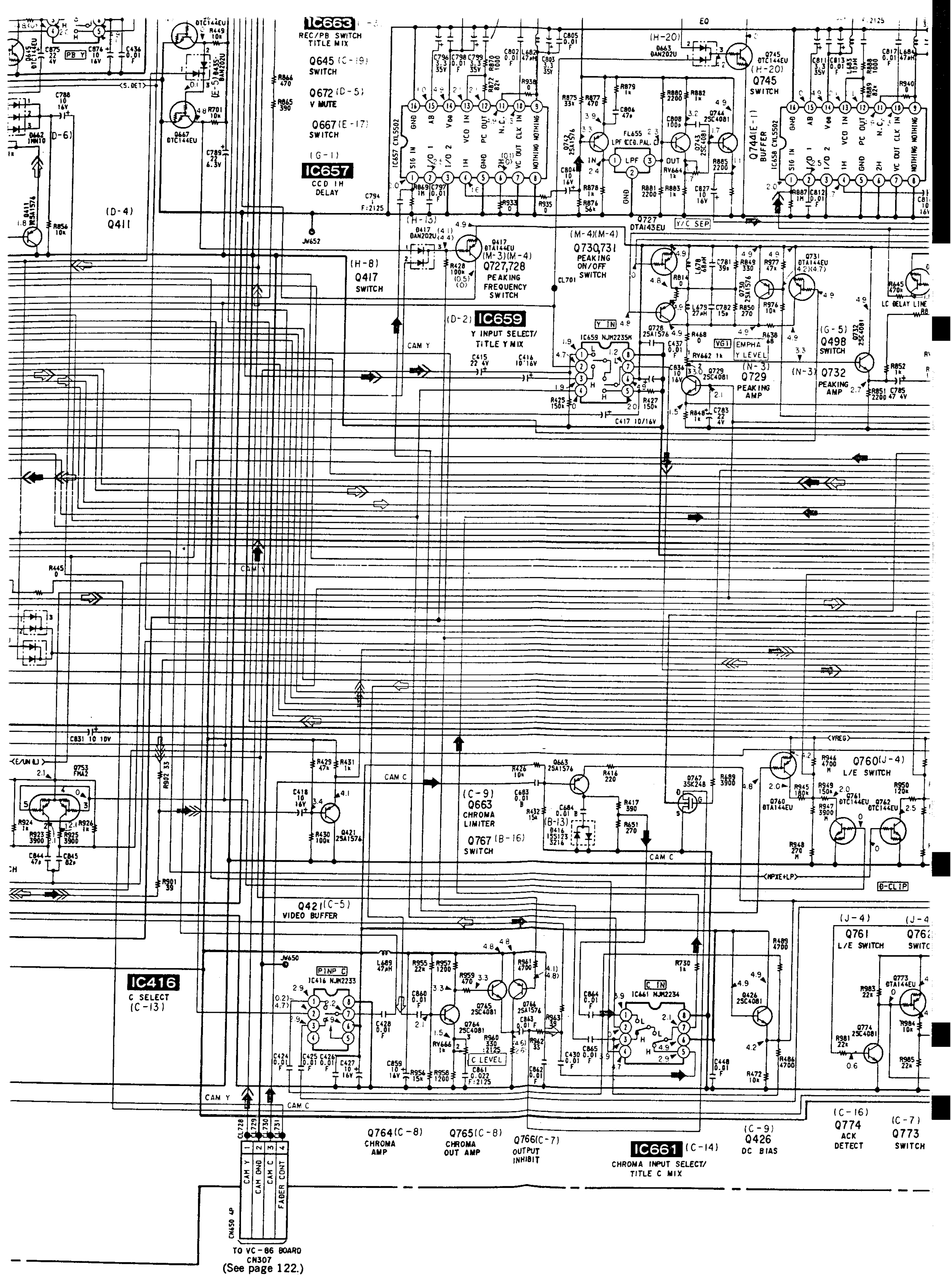
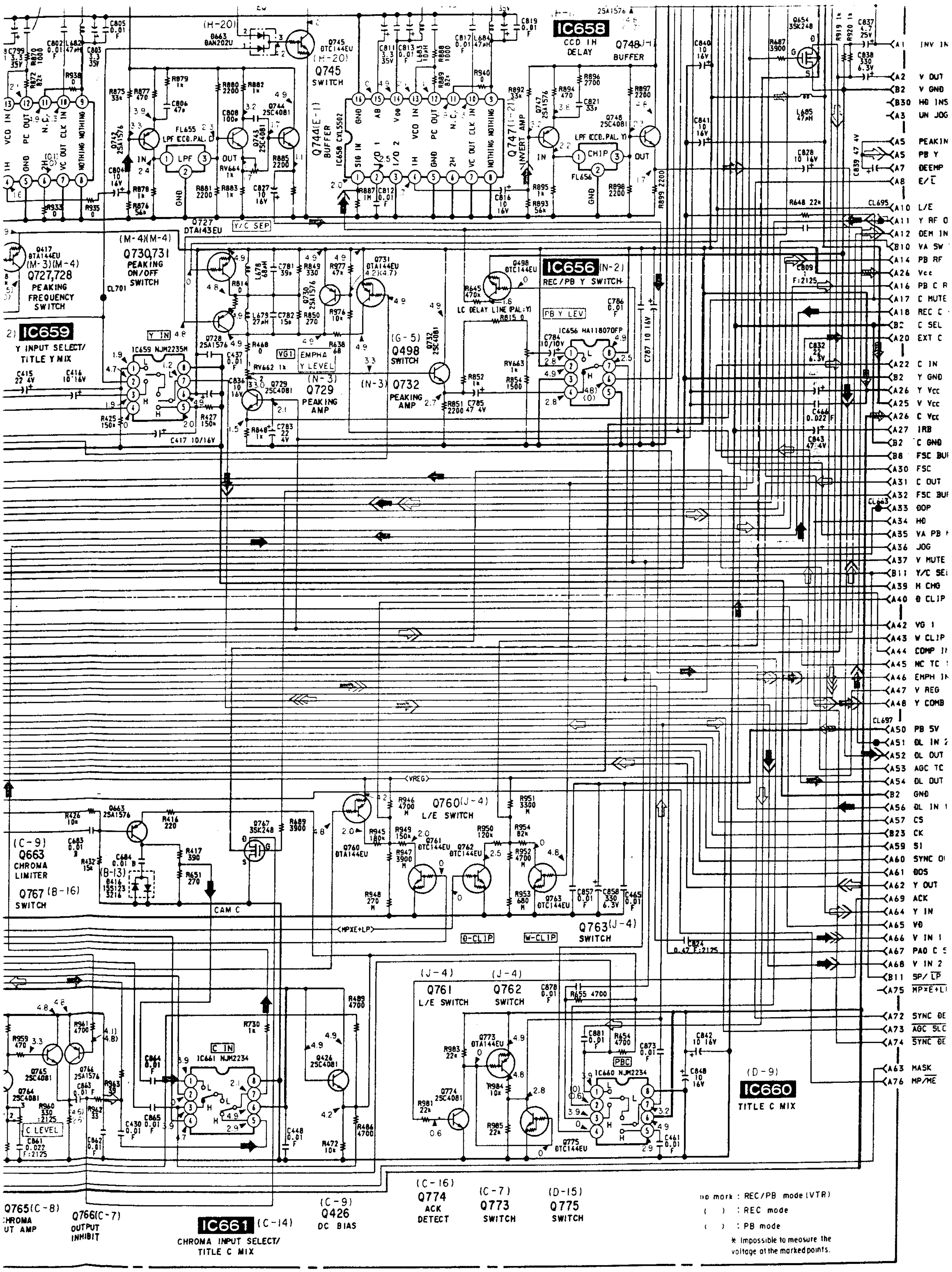

IC663
REC/PB SWITCH
TITLE MIX
Q645 (C-19)
SWITCH
Q672 (D-5)
V MUTE
Q667 (E-17)
SWITCH
(G-1)
IC657
CCD 1H
DELAY
IC657 CXL5502
IC658 CXL5502
(H-20)
Q663
DAN202U
Q745
DTC144EU
(H-20)
Q745
SWITCH
EQ
Q744 (E-1)
BUFFER
FL655
LPF (CCD, PAL. C)
LPF
Q727
DTA143EU
Y/C SEP
(D-4)
Q411
JW652
(H-13)
Q417
DAN202U
Q417
DTA144EU
(M-3)(M-4)
Q727,728
PEAKING
FREQUENCY
SWITCH
(H-8)
Q417
SWITCH
(M-4)(M-4)
Q730,731
PEAKING
ON/OFF
SWITCH
CL701
(D-2) IC659
Y INPUT SELECT/
TITLE Y MIX
IC659 NJM2235M
Y IN
EMPHA
Y LEVEL
VG1
(N-3)
Q729
PEAKING
AMP
(N-3) Q732
PEAKING
AMP
(G-5)
Q498
SWITCH
LC DELAY LINE
CAM Y
CAM C
(C-9)
Q663
CHROMA
LIMITER
Q767 (B-16)
SWITCH
(B-13)
D416
1SS123
Q760 (J-4)
L/E SWITCH
<VREG>
<MPXE+LP>
B-CLIP
Q421 (C-5)
VIDEO BUFFER
Q753
FMA2
IC416
C SELECT
(C-13)
IC416 NJM2233
PINP C
JW650
C LEVEL
IC661 NJM2234
C IN
(J-4)
Q761
L/E SWITCH
(J-4)
Q762
SWITCH
Q764 (C-8)
CHROMA
AMP
Q765 (C-8)
CHROMA
OUT AMP
Q766 (C-7)
OUTPUT
INHIBIT
IC661 (C-14)
CHROMA INPUT SELECT/
TITLE C MIX
(C-9)
Q426
DC BIAS
(C-16)
Q774
ACK
DETECT
(C-7)
Q773
SWITCH
CL728
CL729
CL730
CL731
1 CAM Y
2 CAM GND
3 CAM C
4 FADER CONT
CN650 4P
TO VC-86 BOARD
CN307
(See page 122.)


IC658
CCD 1H DELAY
Q748 BUFFER
Q745 SWITCH
Q744 BUFFER
Q747 INVERT AMP
IC658 CXL5502
LPF (CO.PAL.)
FL655
FL656
CHIP
Y/C SEP
Q727 DTA143EU
Q730,731 PEAKING ON/OFF SWITCH
Q727,728 PEAKING FREQUENCY SWITCH
IC659
Y INPUT SELECT/ TITLE Y MIX
IC659 NJM2235M
Y IN
VG1
EMPHA
Y LEVEL
Q729 PEAKING AMP
Q732 PEAKING AMP
Q498 SWITCH
IC656
REC/PB Y SWITCH
IC656 HA118070FP
LC DELAY LINE (PAL:Y)
PB Y LEV
Q663 CHROMA LIMITER
Q767 SWITCH
CAM C
(VREG)
Q760 L/E SWITCH
Q763 SWITCH
B-CLIP
W-CLIP
(MPXE+LP)
Q761 L/E SWITCH
Q762 SWITCH
PBC
IC660 NJM2234
IC660 TITLE C MIX
C IN
IC661 NJM2234
C LEVEL
Q765 CHROMA OUT AMP
Q766 OUTPUT INHIBIT
IC661 CHROMA INPUT SELECT/ TITLE C MIX
Q426 DC BIAS
Q774 ACK DETECT
Q773 SWITCH
Q775 SWITCH
A1 INV IN
A2 V OUT
B2 V GND
B30 HD INS
A3 UN JOG
A5 PEAKIN
A5 PB Y
A7 DEEMP
A8 E/E̅
A10 L/E
A11 Y RF O
A12 DEM IN
B10 VA SW
A14 PB RF
A26 Vcc
A16 PB C R
A17 C MUTE
A18 REC C
B2 C SEL
A20 EXT C
A22 C IN
B2 Y GND
A26 Y Vcc
A25 V Vcc
A26 C Vcc
A27 IRB
B2 C GND
B6 FSC BU
A30 FSC
A31 C OUT
A32 FSC BU
A33 DOP
A34 HD
A35 VA PB
A36 JOG
A37 V MUTE
B11 Y/C SE
A39 H CHG
A40 B CLIP
A42 VG 1
A43 W CLIP
A44 COMP I
A45 NC TC
A46 EMPH I
A47 V REG
A48 Y COMB
A50 PB 5V
A51 DL IN
A52 DL OUT
A53 AGC TC
A54 DL OUT
B2 GND
A56 DL IN
A57 CS
B23 CK
A59 SI
A60 SYNC O
A61 DOS
A62 Y OUT
A69 ACK
A64 Y IN
A65 VD
A66 V IN 1
A67 PAO C
A68 V IN 2
B11 SP/LP
A75 MPXE+L
A72 SYNC DE
A73 AGC SLC
A74 SYNC DE
A63 MASK
A76 MP/ME

no mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
∗ Impossible to measure the voltage at the marked points.

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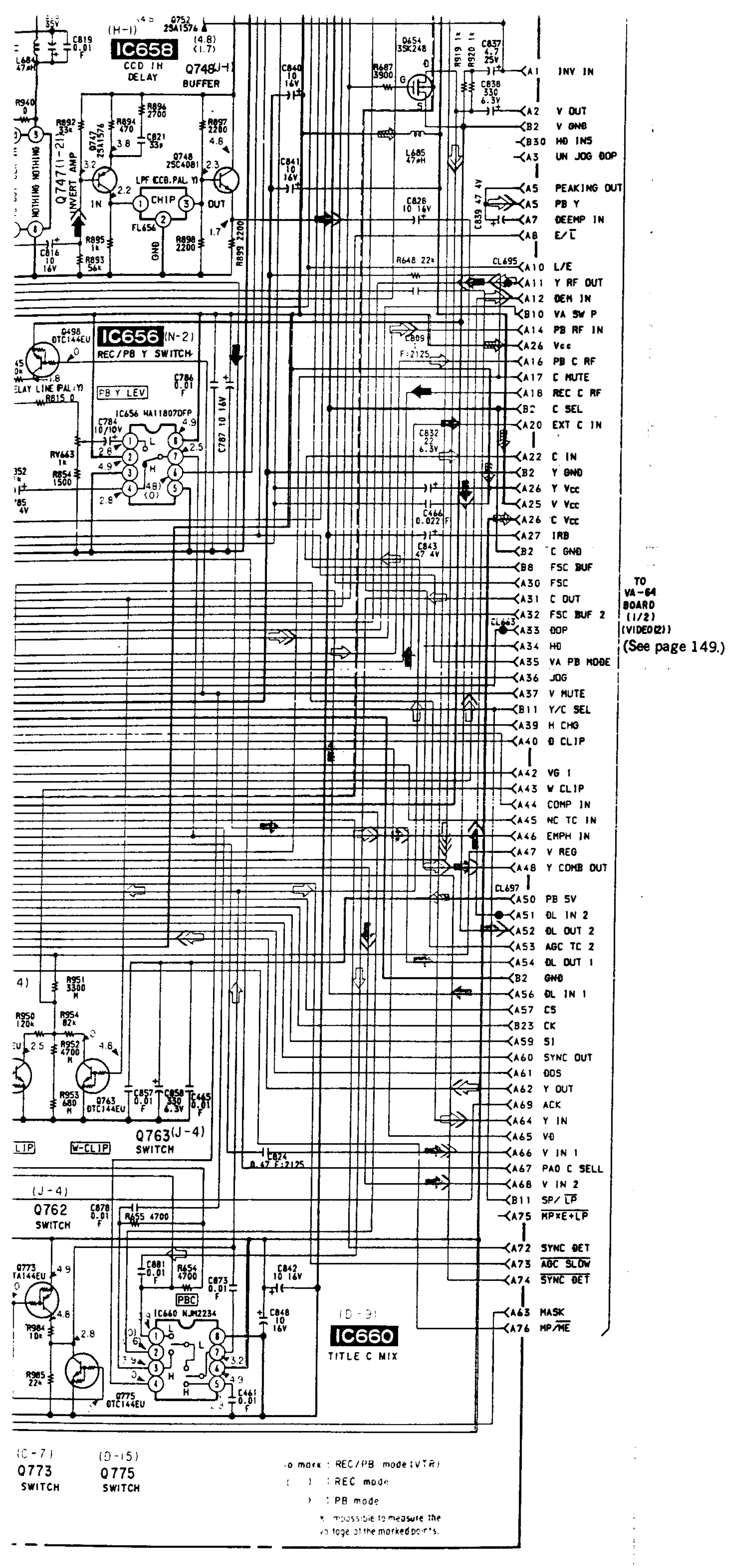
IC658
CCD 1H DELAY
Q748 BUFFER
Q747 INVERT AMP
LPF (CCB.PAL Y)
CHIP
FL656
IC656 (N-2)
REC/PB Y SWITCH
PB Y LEV
IC656 HA11807DFP
Q763 (J-4) SWITCH
Q762 SWITCH
W-CLIP
IC660 NJM2234
PBC
IC660 (D-9)
TITLE C MIX
Q773 SWITCH
Q775 SWITCH
A1 INV IN
A2 V OUT
B2 V GND
B30 HD INS
A3 UN JOG DOP
A5 PEAKING OUT
A5 PB Y
A7 DEEMP IN
A8 E/L̄
A10 L/E
A11 Y RF OUT
A12 DEM IN
B10 VA SW P
A14 PB RF IN
A26 Vcc
A16 PB C RF
A17 C MUTE
A18 REC C RF
B2 C SEL
A20 EXT C IN
A22 C IN
B2 Y GND
A26 Y Vcc
A25 V Vcc
A26 C Vcc
A27 IRB
B2 C GND
B8 FSC BUF
A30 FSC
A31 C OUT
A32 FSC BUF 2
A33 DOP
A34 HD
A35 VA PB MODE
A36 JOG
A37 V MUTE
B11 Y/C SEL
A39 H CHG
A40 D CLIP
A42 VG 1
A43 W CLIP
A44 COMP IN
A45 NC TC IN
A46 EMPH IN
A47 V REG
A48 Y COMB OUT
A50 PB 5V
A51 DL IN 2
A52 DL OUT 2
A53 AGC TC 2
A54 DL OUT 1
B2 GND
A56 DL IN 1
A57 CS
B23 CK
A59 SI
A60 SYNC OUT
A61 DDS
A62 Y OUT
A69 ACK
A64 Y IN
A65 VD
A66 V IN 1
A67 PAO C SELL
A68 V IN 2
B11 SP/L̄P̄
A75 MP×E+LP
A72 SYNC DET
A73 AGC SLOW
A74 SYNC DET
A63 MASK
A76 MP/ME
TO VA-64 BOARD (1/2) (VIDEO(2))
(See page 149.)
o mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
✻ : Impossible to measure the voltage of the marked points.

• Signal path

	VIDEO Signal			
	CHROMA	Y	Y/CHROMA	
REC	➡	➡≫	➡≫	
PB	⇨	⇨≫	⇨≫	

49.)

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• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡⋙	➡
PB	⇨	⇨»	⇨⋙	⇨

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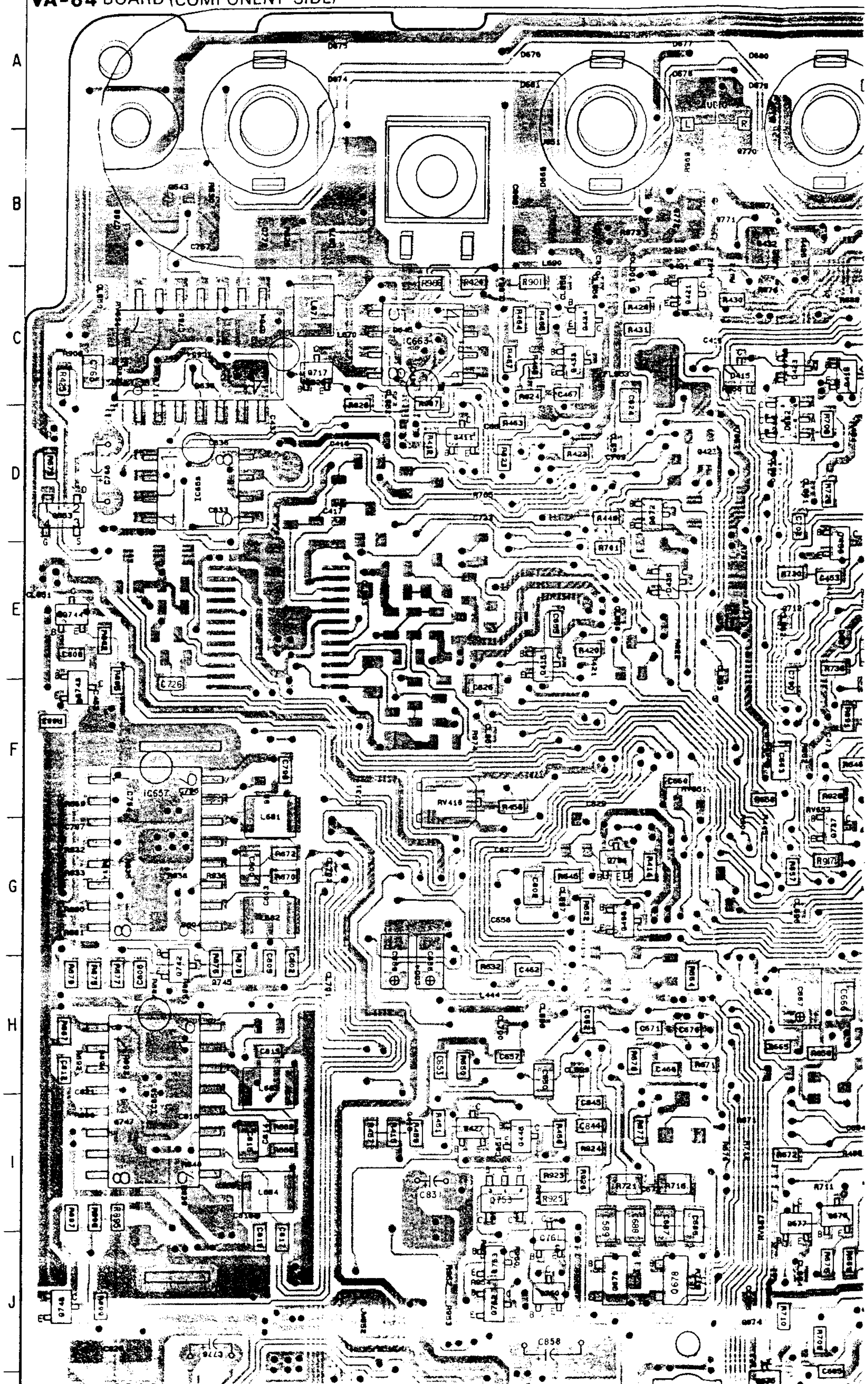
Q452	8-729-905-18	DTC144EU
Q456	8-729-905-18	DTC144EU
Q491	8-729-905-12	DTA144EU
Q493	8-729-905-12	DTA144EU
Q494	8-729-905-35	2SC4081-R
Q498	8-729-905-18	DTC144EU
Q642	8-729-921-58	DTA144TU
Q643	8-729-905-23	2SA1576-R
Q645	8-729-905-18	DTC144EU
Q651	8-729-905-23	2SA1576-R
Q653	8-729-824-05	3SK248
Q654	8-729-824-05	3SK248
Q655	8-729-905-12	DTA144EU
Q656	8-729-905-23	2SA1576-R
Q657	8-729-905-35	2SC4081-R

VA-64 (VIDEO PROCESS) PRINTED WIRING BOARD

—Ref. No. VA-64 BOARD : 3000 series—

VA-64 BOARD (COMPONENT SIDE)



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D415	8-719-421-30	MA141A
D416	8-719-800-76	1SS226
D417	8-719-941-86	DAN202U
D419	8-719-941-09	DAP202U
D420	8-719-941-86	DAN202U
D422	8-719-941-86	DAN202U
D423	8-719-941-86	DAN202U
D427	8-719-941-86	DAN202U
D428	8-719-941-86	DAN202U
D435	8-719-941-86	DAN202U
D651	8-719-941-86	DAN202U
D652	8-719-977-22	DTZ9. 1
D654	8-719-977-22	DTZ9. 1
D655	8-719-800-76	1SS226
D656	8-719-941-86	DAN202U
D657	8-719-800-76	1SS226
D661	8-719-941-86	DAN202U
D662	8-719-951-22	IMN10
D663	8-719-941-86	DAN202U
D667	8-719-941-89	DA106U
D669	8-719-977-22	DTZ9. 1
D670	8-719-977-22	DTZ9. 1
D671	8-719-977-22	DTZ9. 1
D672	8-719-977-22	DTZ9. 1
D674	8-719-977-22	DTZ9. 1
D675	8-719-977-22	DTZ9. 1
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-729-905-18	DTC144EU
-729-202-38	2SC3326N
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Q744	8-729-905-35	2SC4081-R
Q745	8-729-905-18	DTC144EU
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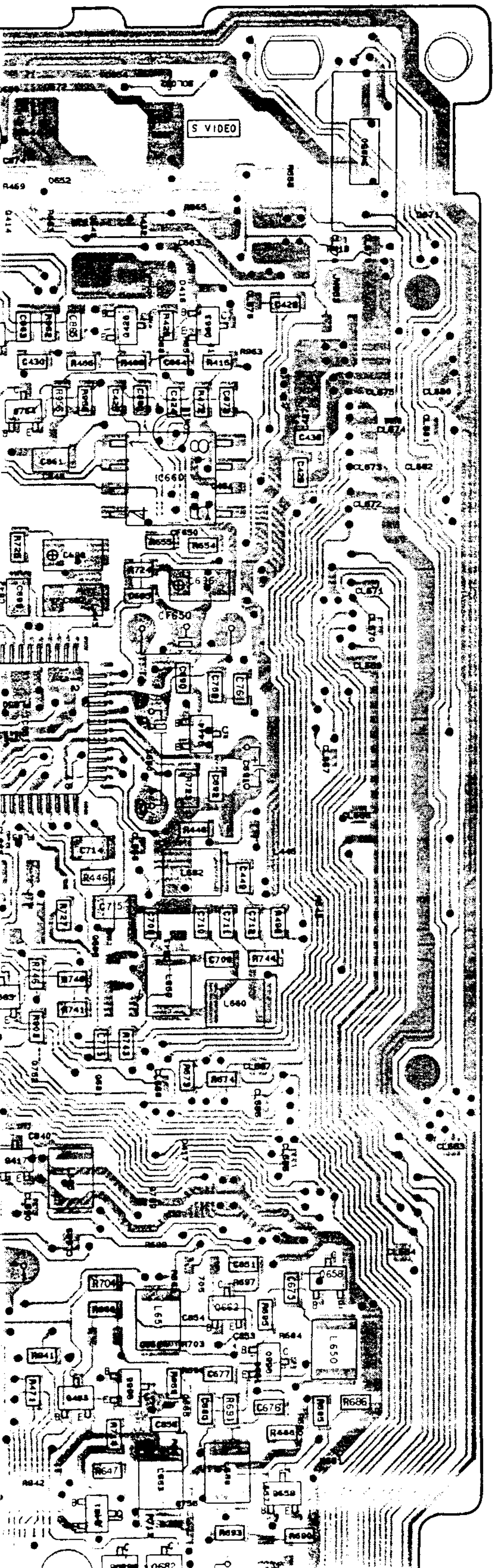
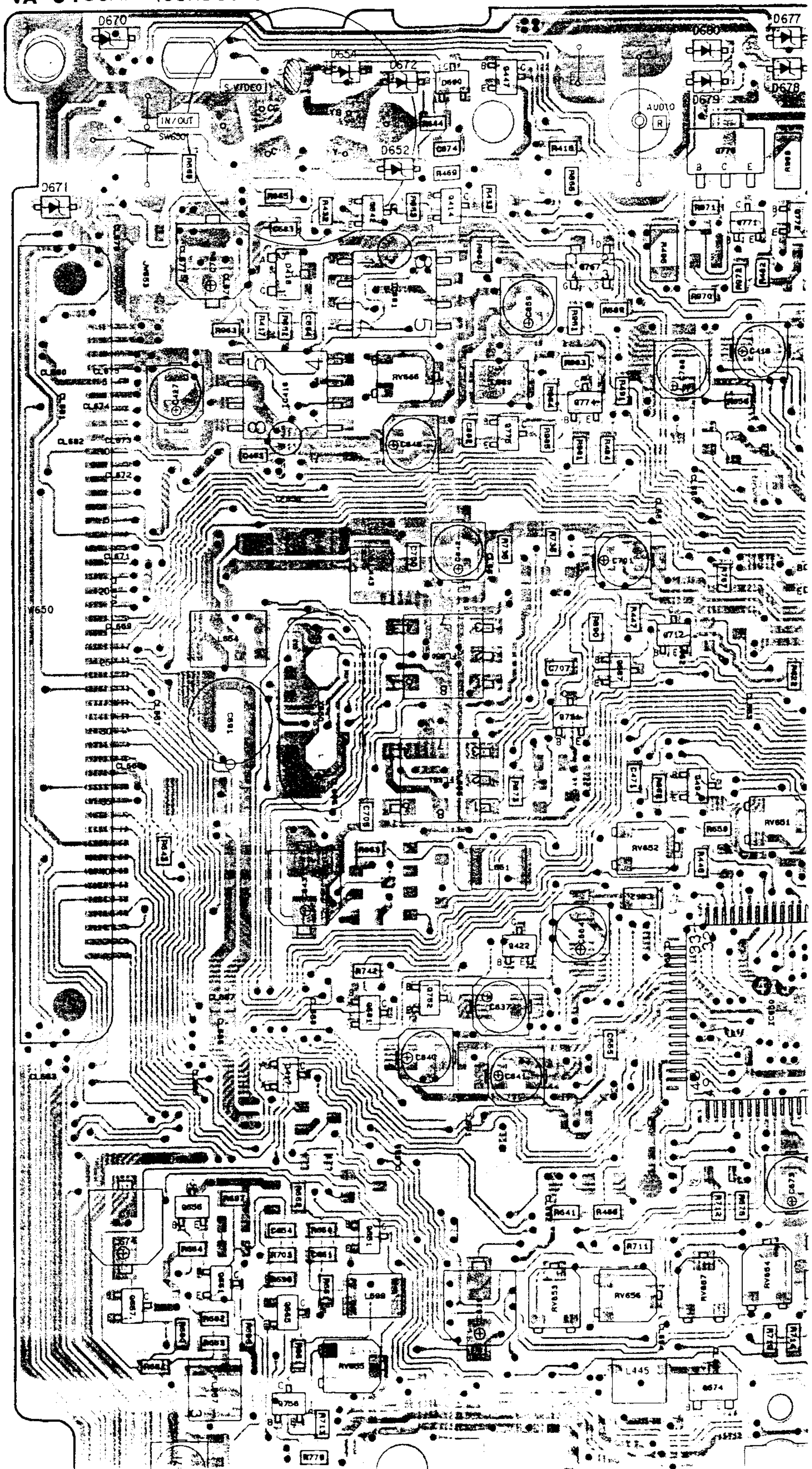


VA-64 BOARD (CONDUCTOR SIDE)



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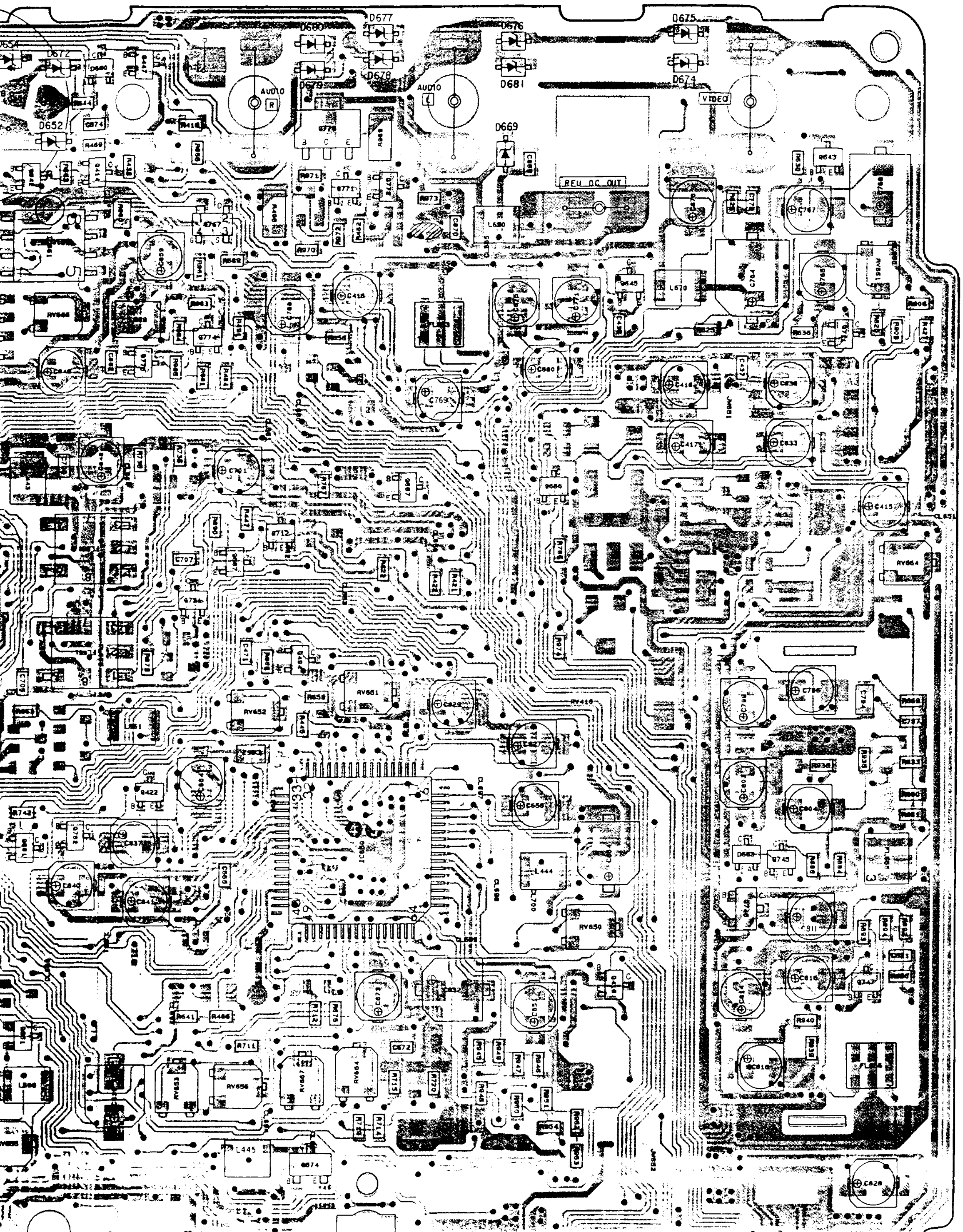
Email:- enquiries@mauritron.co.uk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IC654	8-752-009-51	CX20095A
IC656	8-759-320-76	HA118070FP
IC657	8-752-332-68	CXL5502M
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IC659	8-759-710-29	NJM2235M
IC660	8-759-710-07	NJM2234M
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Q417	8-729-905-12	DTA144EU
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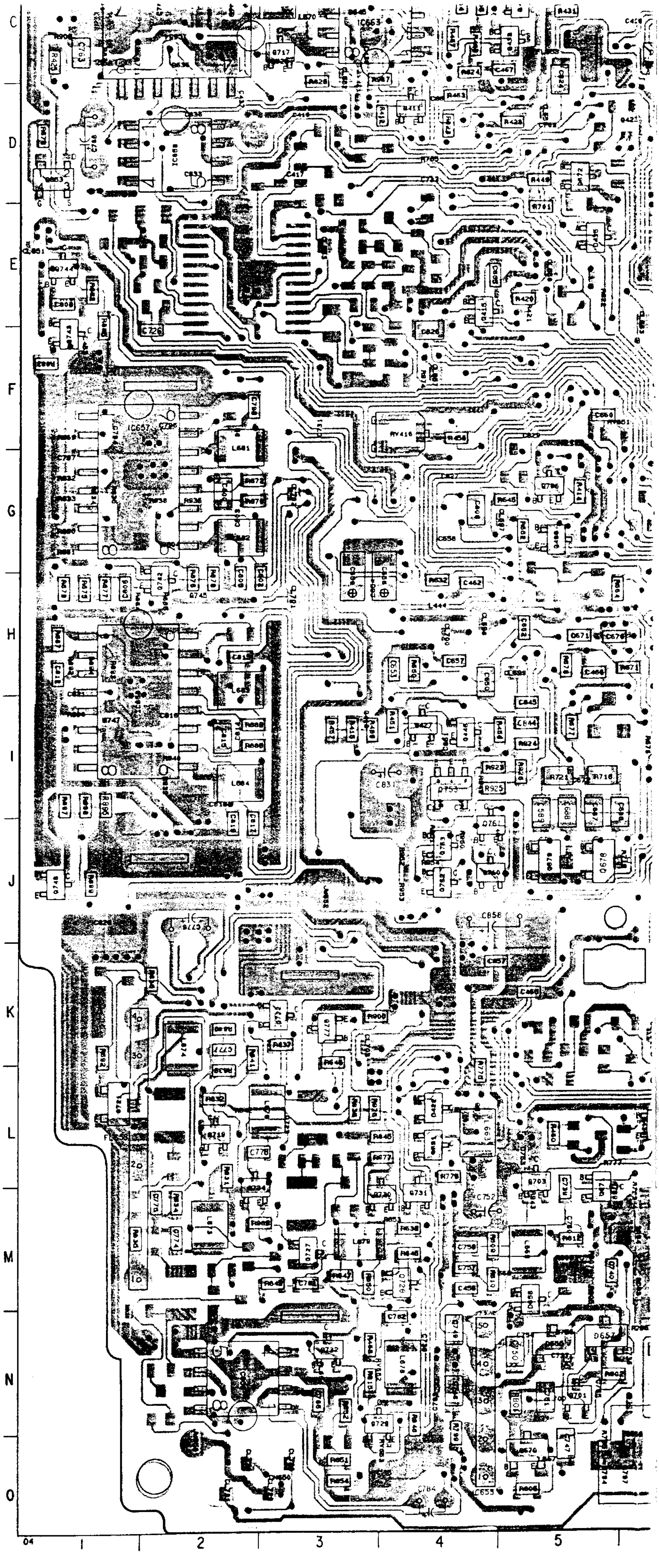

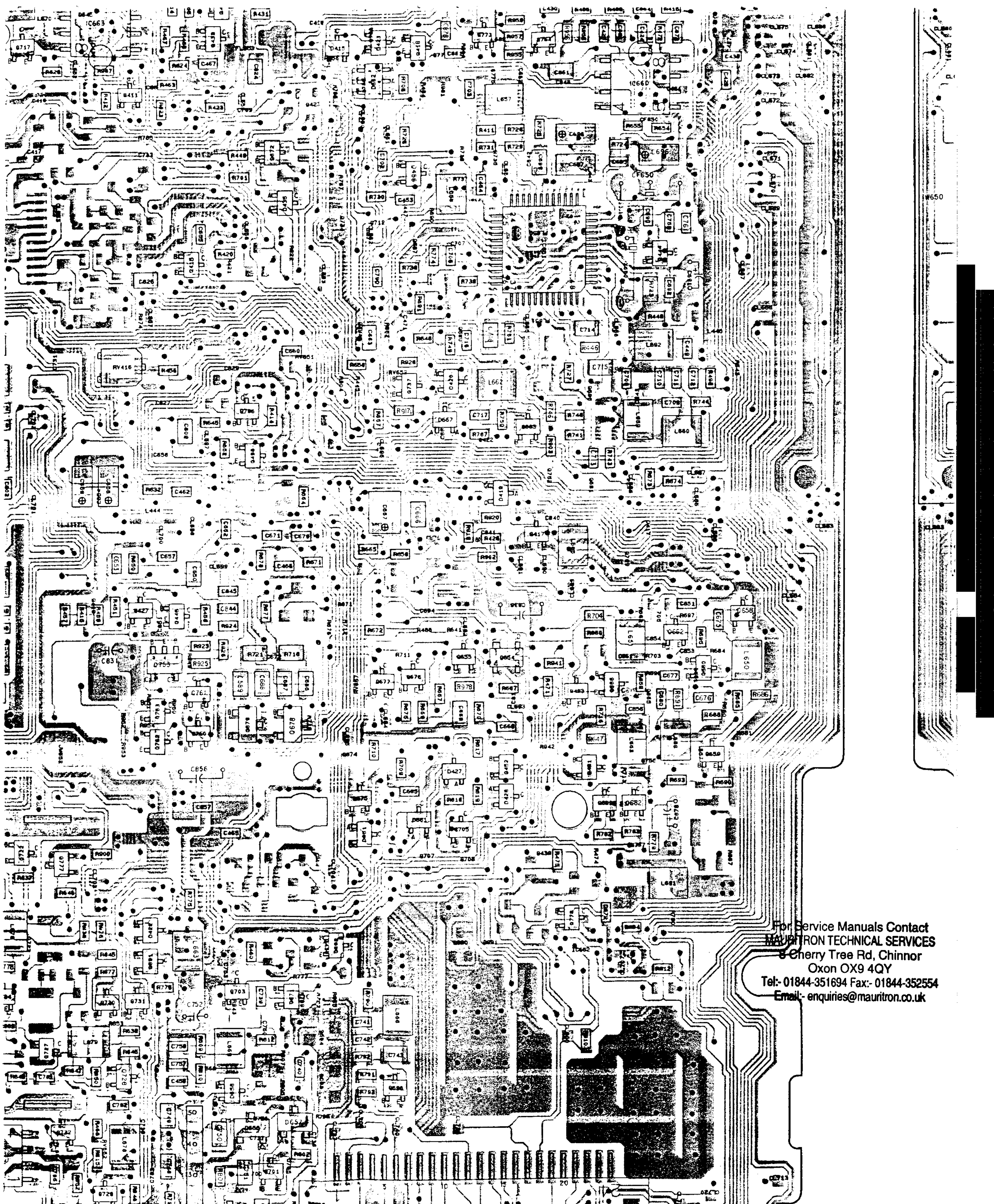

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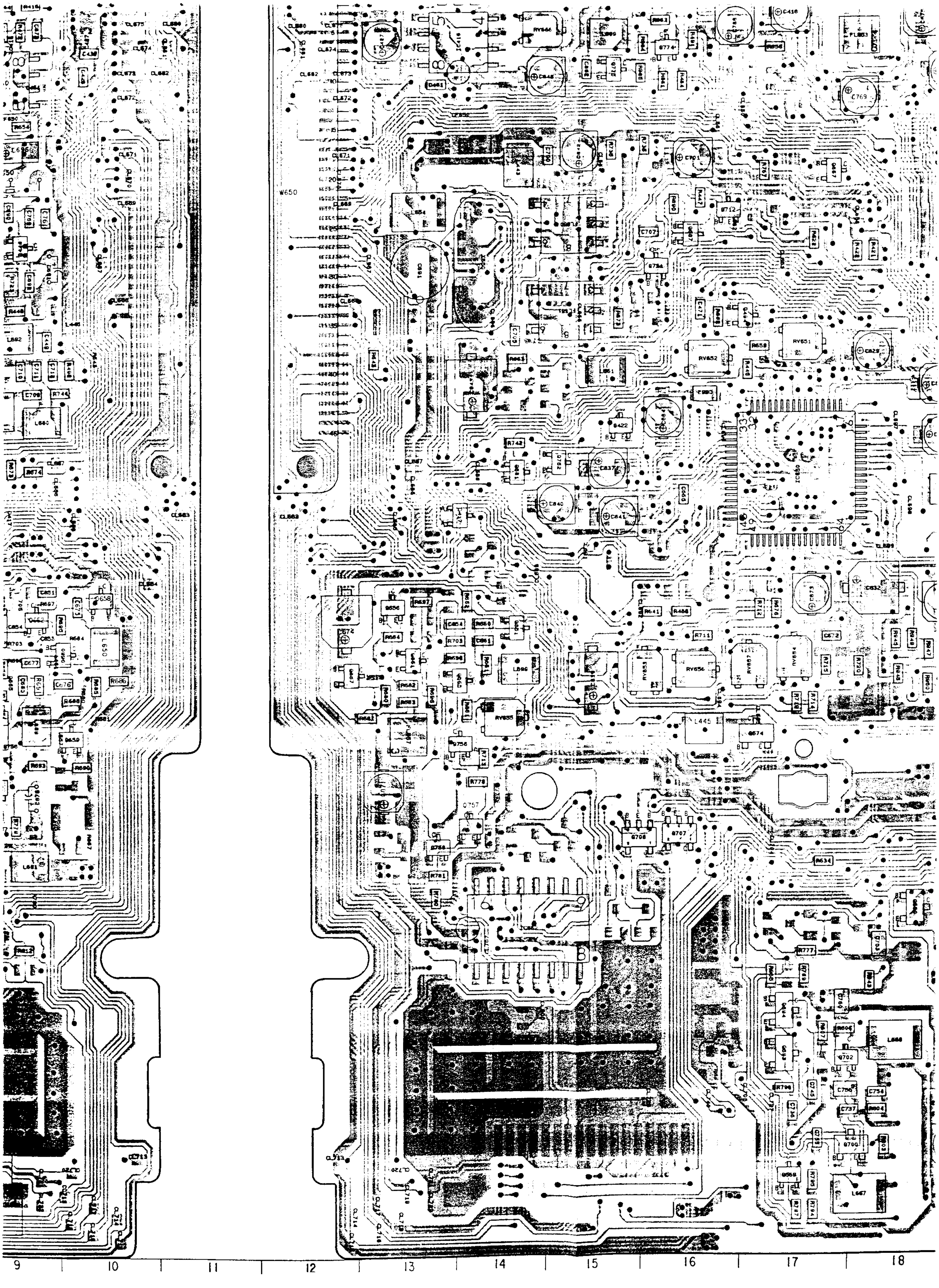
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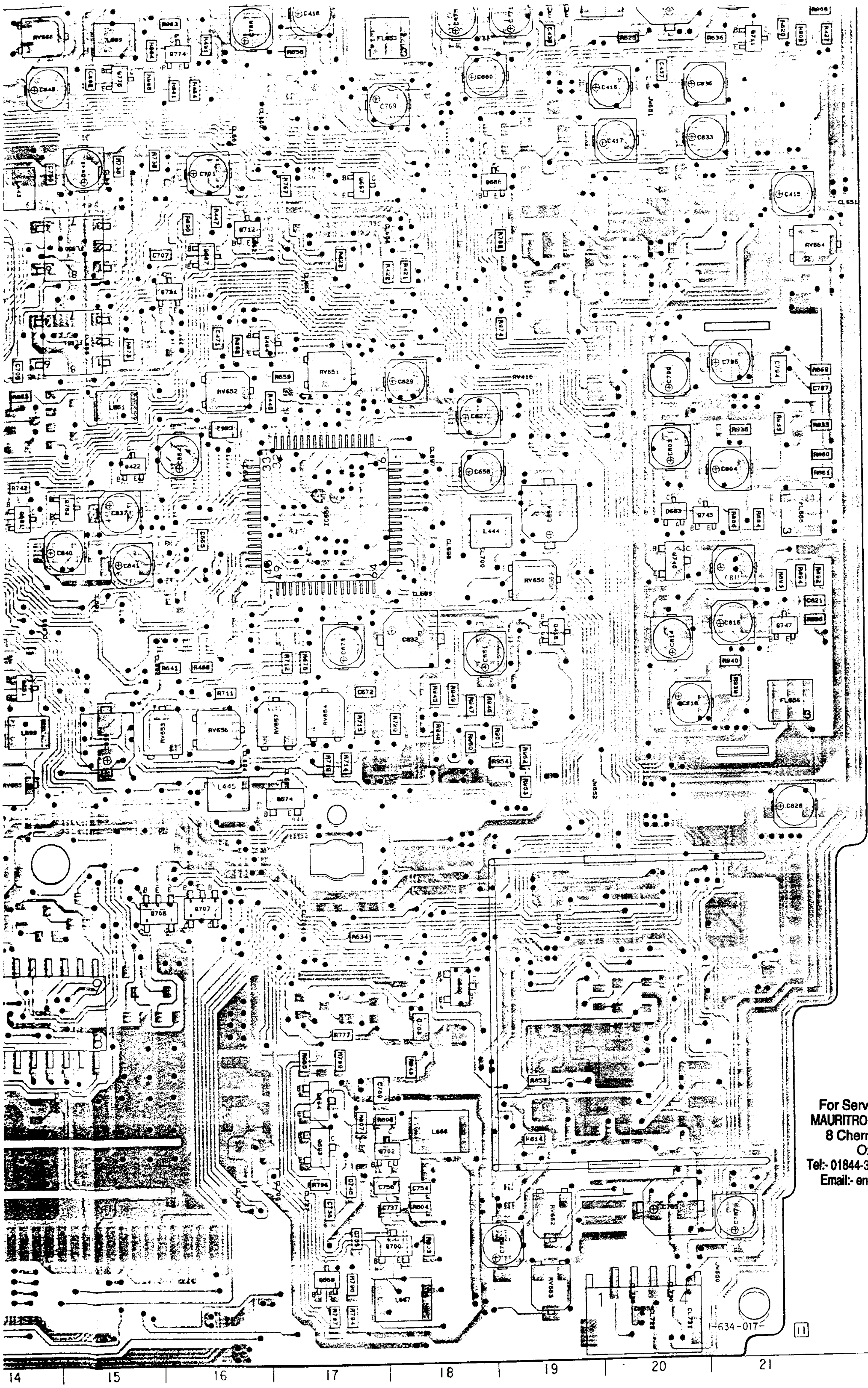
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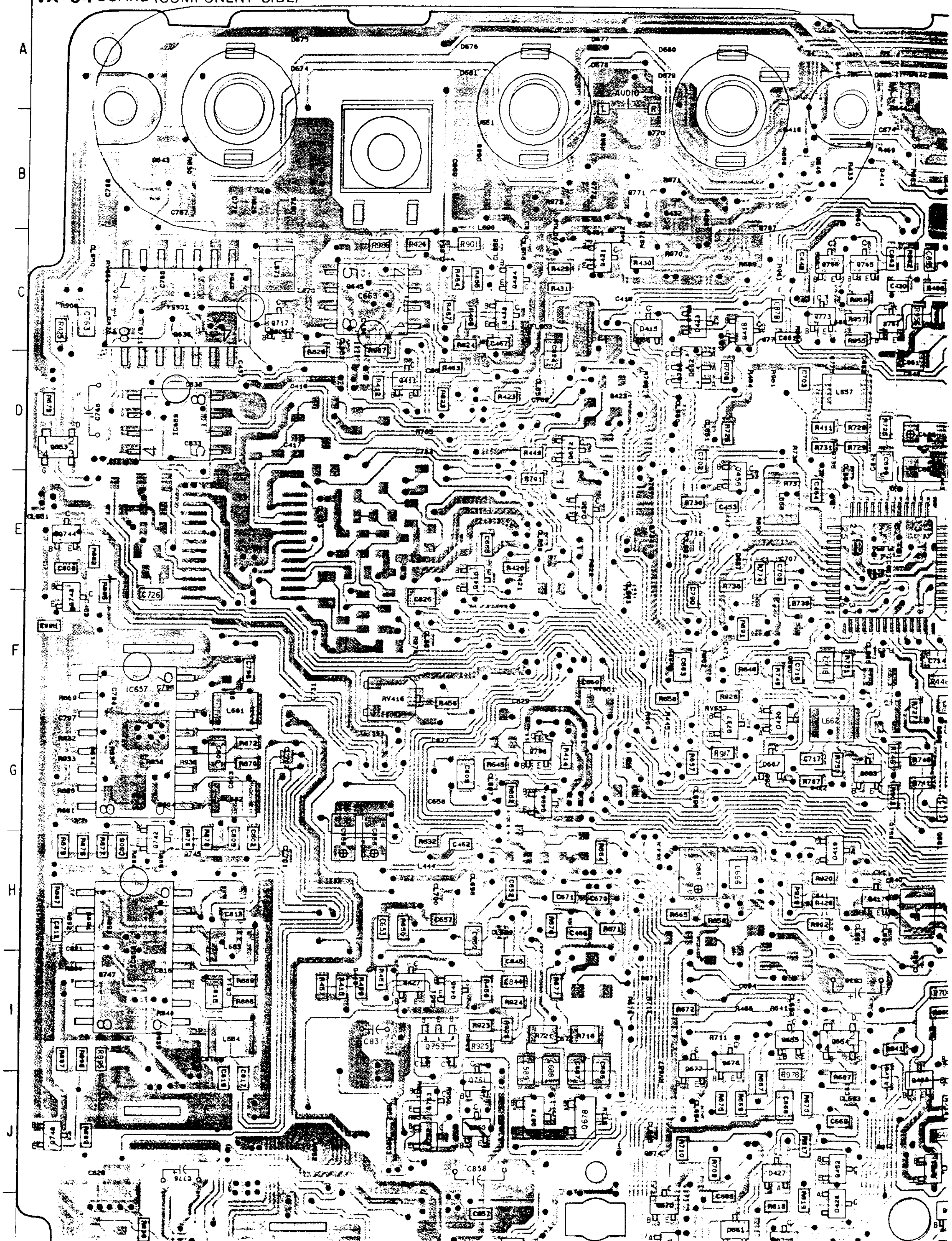
D678	8-719-977-22	DTZ9.
D679	8-719-977-22	DTZ9.

VA-64 (VIDEO PROCESS) PRINTED WIRING BOARD

—Ref. No. VA-64 BOARD : 3000 series—

VA-64 BOARD (COMPONENT SIDE)



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D669	8-719-977-22	DTZ9. 1
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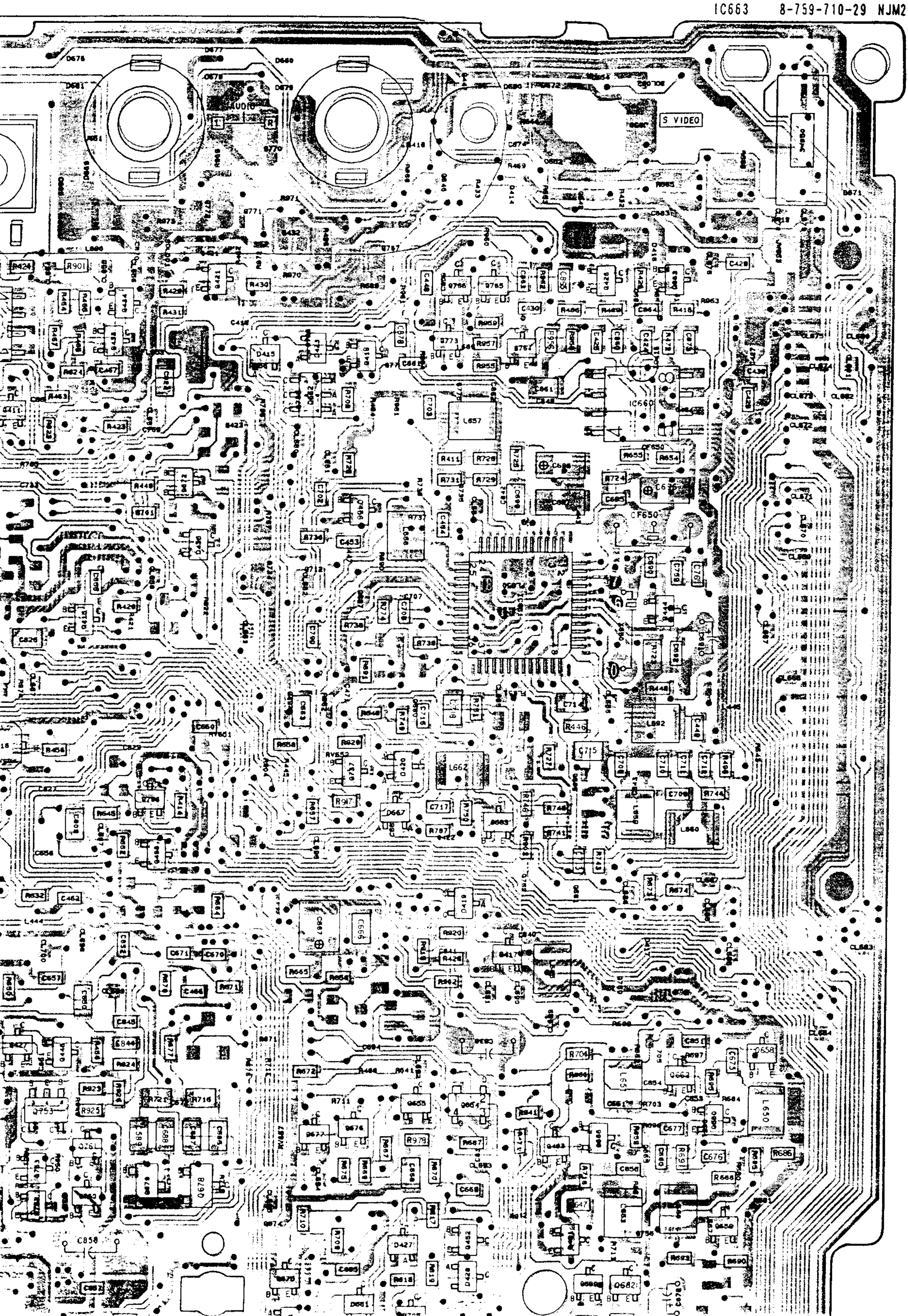

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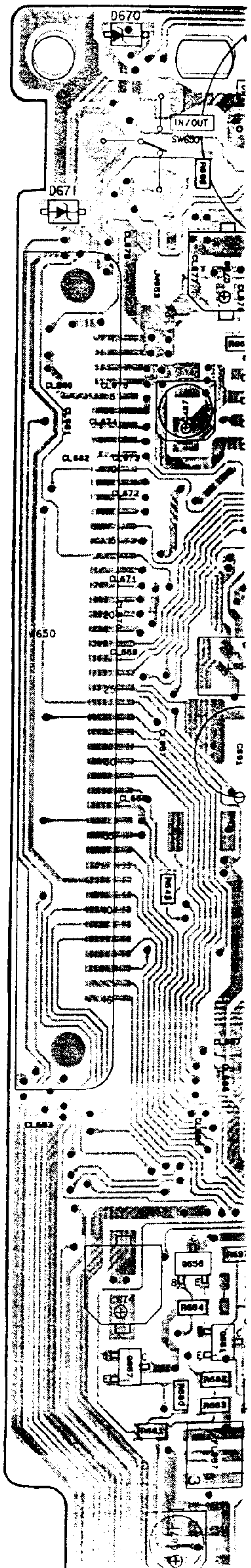

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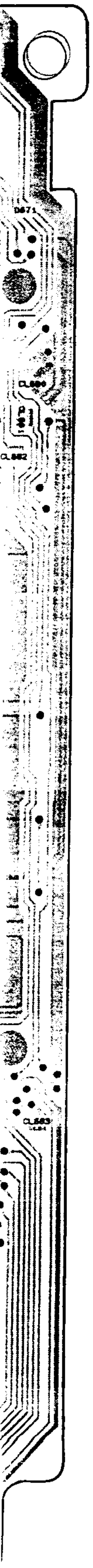

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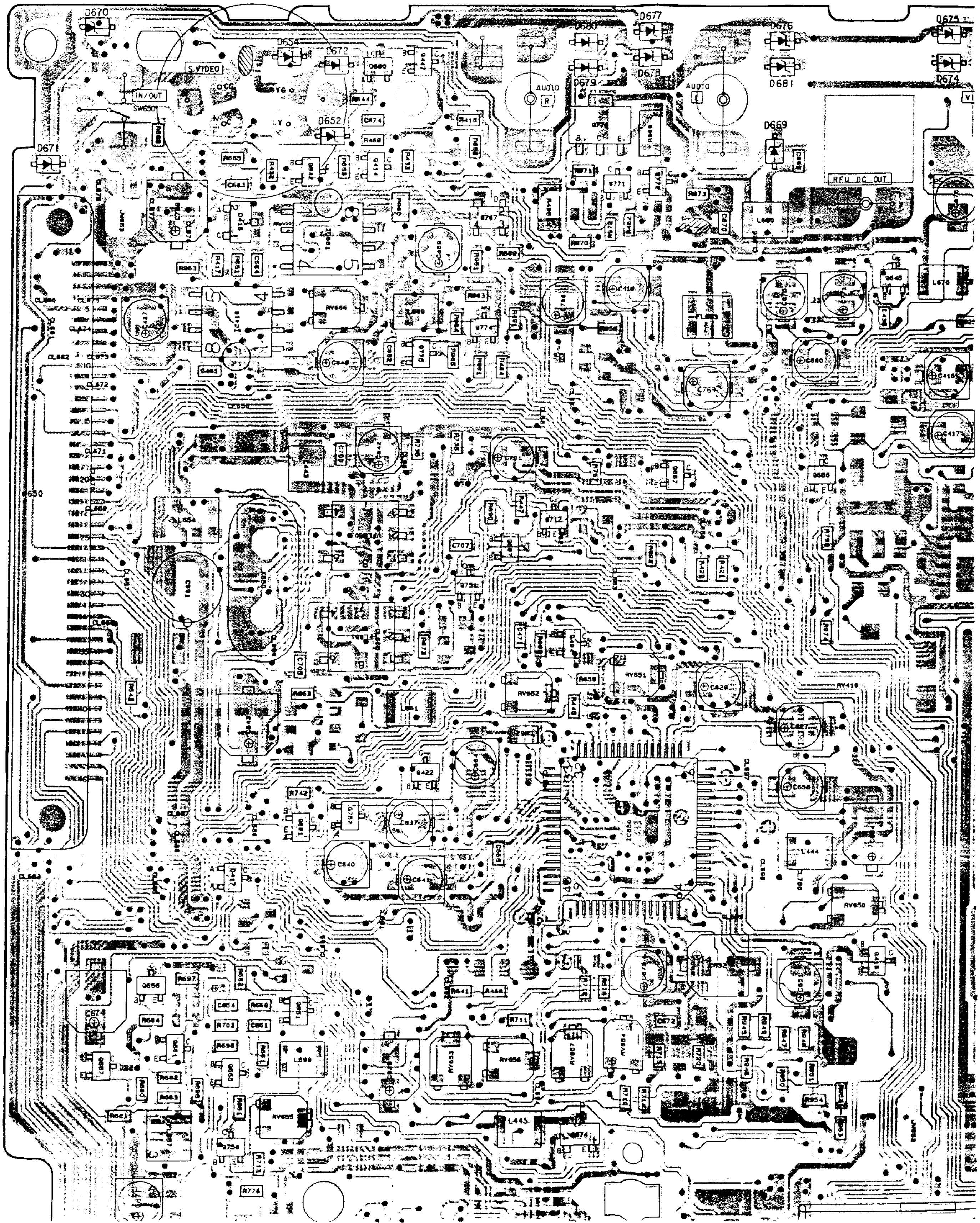
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AUDIO R
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D669
RFU DC OUT
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Q659	8-729-905-35	2SC4081-R
Q660	8-729-117-72	2SC4178
Q661	8-729-905-35	2SC4081-R
Q662	8-729-117-72	2SC4178
Q663	8-729-905-23	2SA1576-R
Q665	8-729-905-35	2SC4081-R
Q666	8-729-905-35	2SC4081-R
Q667	8-729-905-18	DTC144EU
Q669	8-729-905-18	DTC144EU
Q670	8-729-202-38	2SC3326N
Q671	8-729-905-18	DTC144EU
Q672	8-729-905-18	DTC144EU
Q674	8-729-141-48	2SB624-BV345
Q675	8-729-905-18	DTC144EU
Q676	8-729-905-12	DTA144EU
Q677	8-729-905-12	DTA144EU
Q678	8-729-202-38	2SC3326N
Q679	8-729-202-38	2SC3326N
Q681	8-729-905-35	2SC4081-R
Q682	8-729-905-35	2SC4081-R
Q683	8-729-905-23	2SA1576-R
Q686	8-729-905-35	2SC4081-R
Q687	8-729-905-35	2SC4081-R
Q690	8-729-141-48	2SB624-BV345
Q691	8-729-905-18	DTC144EU
Q692	8-729-905-18	DTC144EU
Q693	8-729-202-38	2SC3326N
Q694	8-729-202-38	2SC3326N

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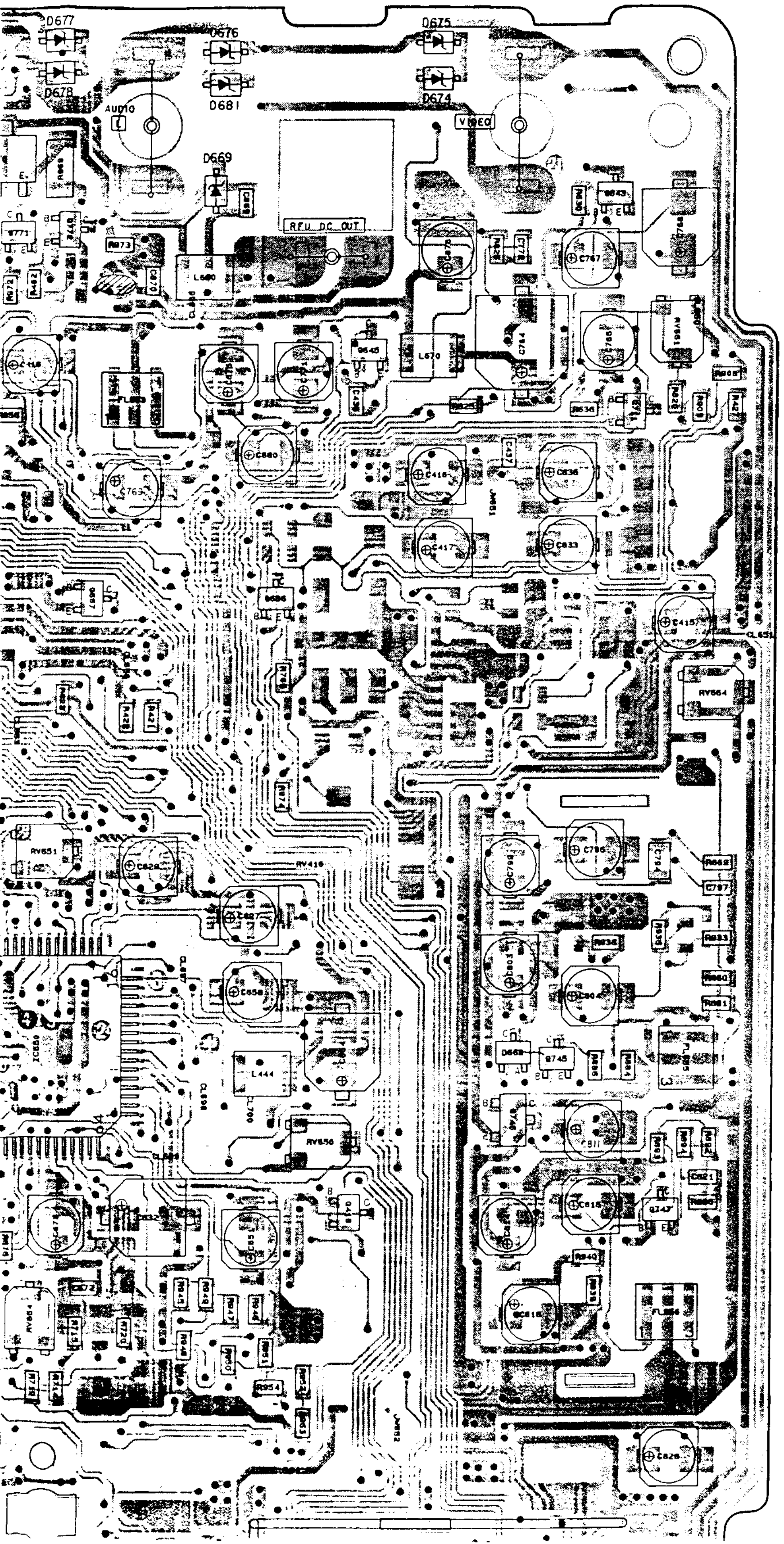
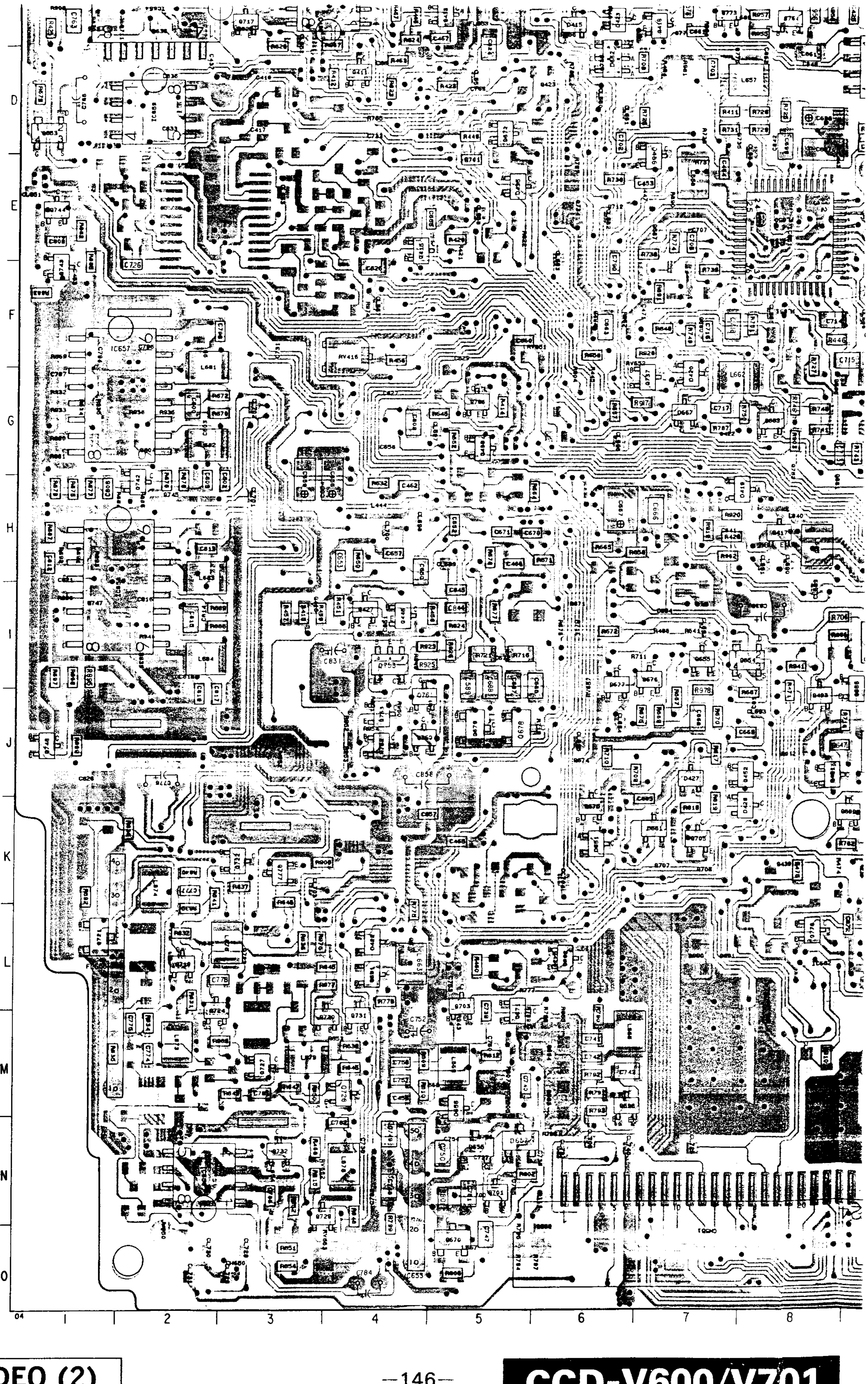


Q698	8-729-905-35	2SC4081-R
Q699	8-729-905-12	DTA144EU
Q700	8-729-202-38	2SC3326N
Q701	8-729-905-35	2SC4081-R
Q702	8-729-905-35	2SC4081-R
Q703	8-729-905-23	2SA1576-R
Q705	8-729-905-12	DTA144EU
Q707	8-729-904-20	FMA2
Q708	8-729-904-07	FMG2
Q711	8-729-905-12	DTA144EU
Q712	8-729-905-12	DTA144EU
Q717	8-729-905-23	2SA1576-R
Q719	8-729-905-18	DTC144EU
Q721	8-729-202-38	2SC3326N
Q722	8-729-905-35	2SC4081-R
Q724	8-729-905-23	2SA1576-R
Q727	8-729-905-45	DTA143EU
Q728	8-729-905-23	2SA1576-R
Q729	8-729-905-35	2SC4081-R
Q730	8-729-905-23	2SA1576-R
Q731	8-729-905-12	DTA144EU
Q732	8-729-905-35	2SC4081-R
Q737	8-729-905-12	DTA144EU
Q742	8-729-905-23	2SA1576-R
Q743	8-729-905-35	2SC4081-R
Q744	8-729-905-35	2SC4081-R
Q745	8-729-905-18	DTC144EU
Q746	8-729-141-48	2SB624-BV345
Q747	8-729-905-23	2SA1576-R
Q748	8-729-905-35	2SC4081-R
Q751	8-729-905-35	2SC4081-R
Q752	8-729-905-23	2SA1576-R
Q753	8-729-904-20	FMA2
Q756	8-729-905-23	2SA1576-R
Q757	8-729-905-35	2SC4081-R
Q758	8-729-905-35	2SC4081-R
Q760	8-729-905-12	DTA144EU
Q761	8-729-905-18	DTC144EU
Q762	8-729-905-18	DTC144EU
Q763	8-729-905-18	DTC144EU
Q764	8-729-905-35	2SC4081-R
Q765	8-729-905-35	2SC4081-R
Q766	8-729-905-23	2SA1576-R
Q767	8-729-824-05	3SK248
Q770	8-729-101-07	2SB798-DLDK
Q771	8-729-905-35	2SC4081-R
Q772	8-729-905-12	DTA144EU
Q773	8-729-905-12	DTA144EU


D
E
F
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J
K
L
M
N
O
1
2
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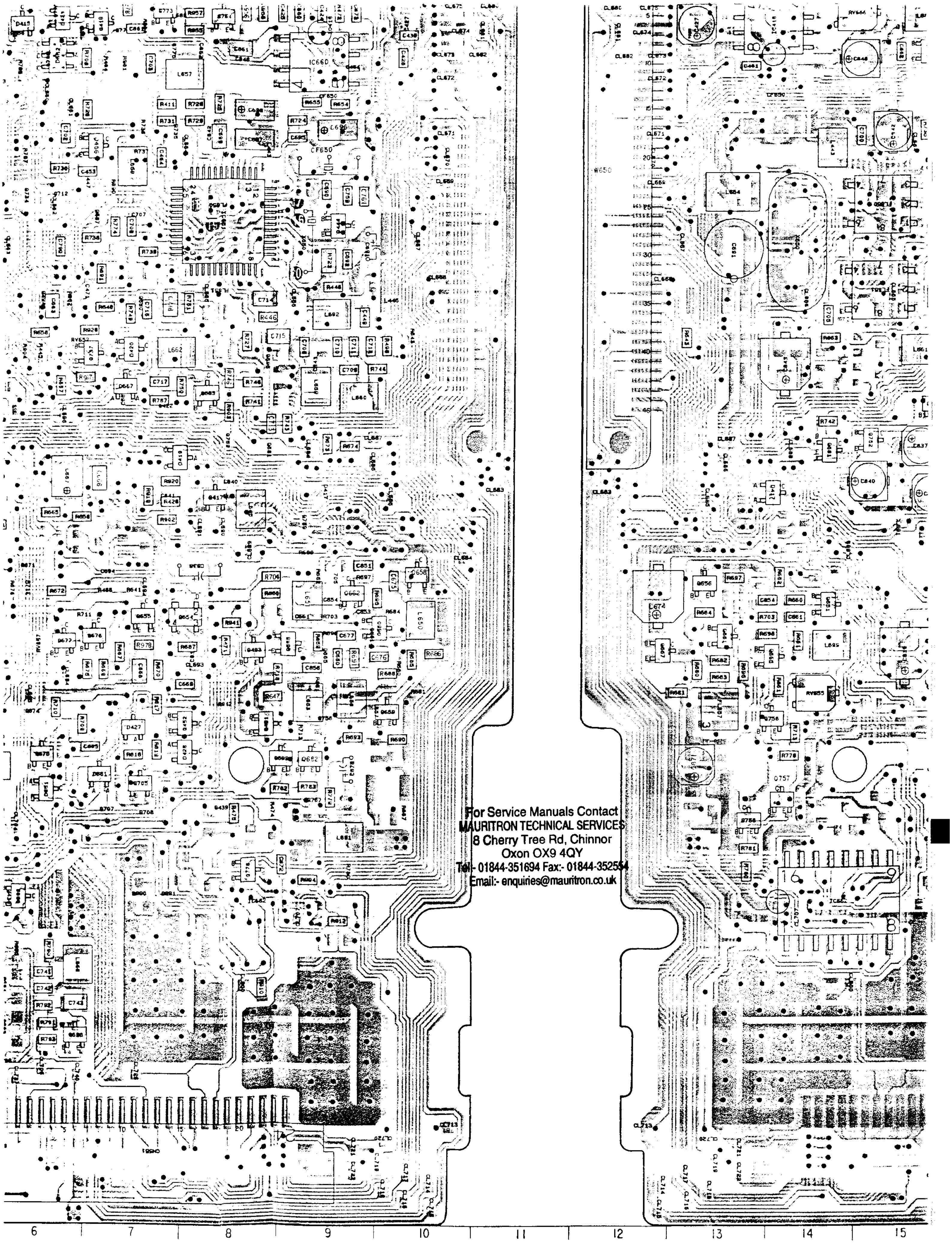
7
8
IC657
IC659
IC653
L681
L684
L657
L662
RV416
C726
C831
C858


IC660
CF650
W650
L657
L650
L662
L654
L685
RY652
RY655
6
7
8
9
10
11
12
13
14
15

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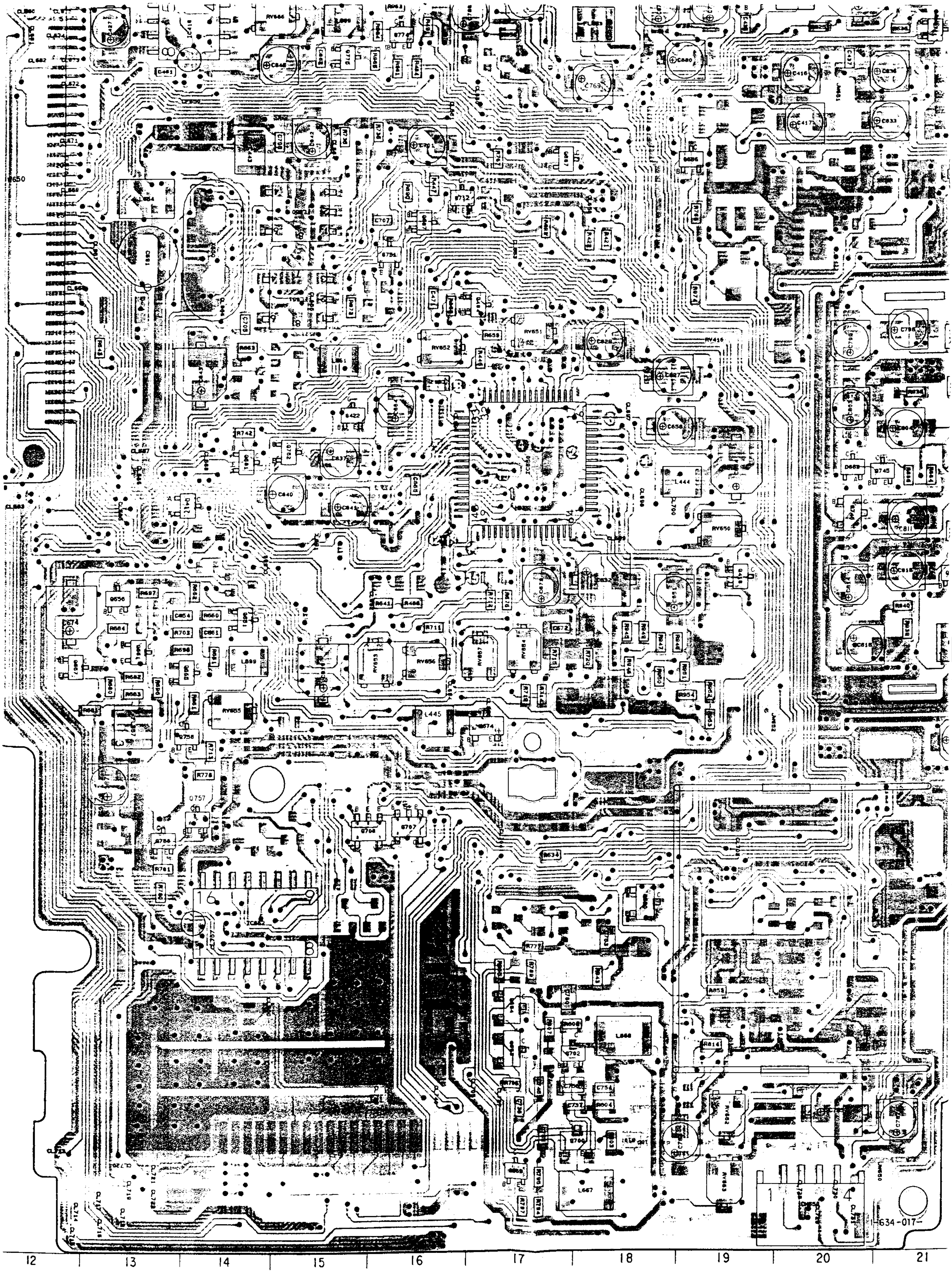
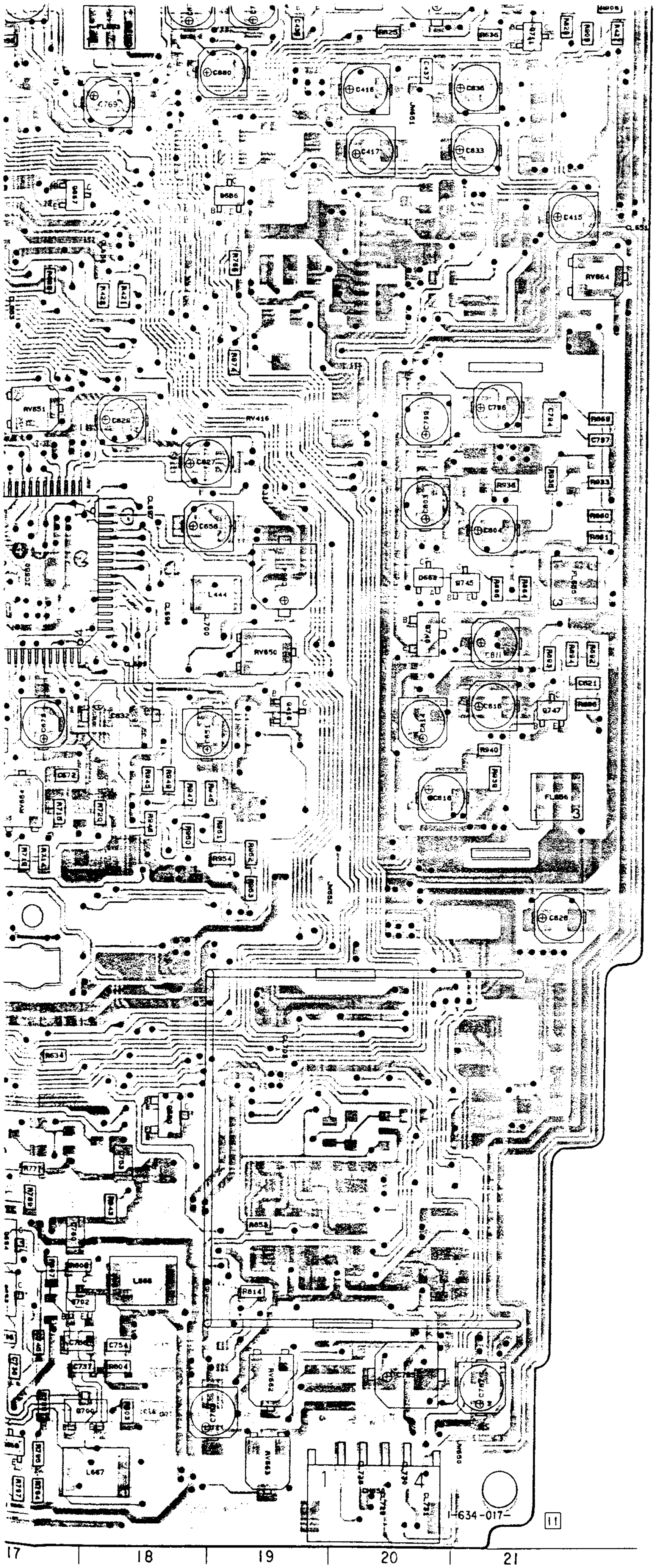

12
13
14
15
16
17
18
19
20
21
634-017-
IC650
RV651
RV652
RV650
RV653
RV654
RV655
RV656
RV657
L444
L445
L667
L668
L699
C769
C840
C841
C416
C417
C833
C811
C818
C816
R742
R641
R711
R954
R778
R761
R634
R814
C754
C707
C709

VIDEO (2) VIDEO (2)

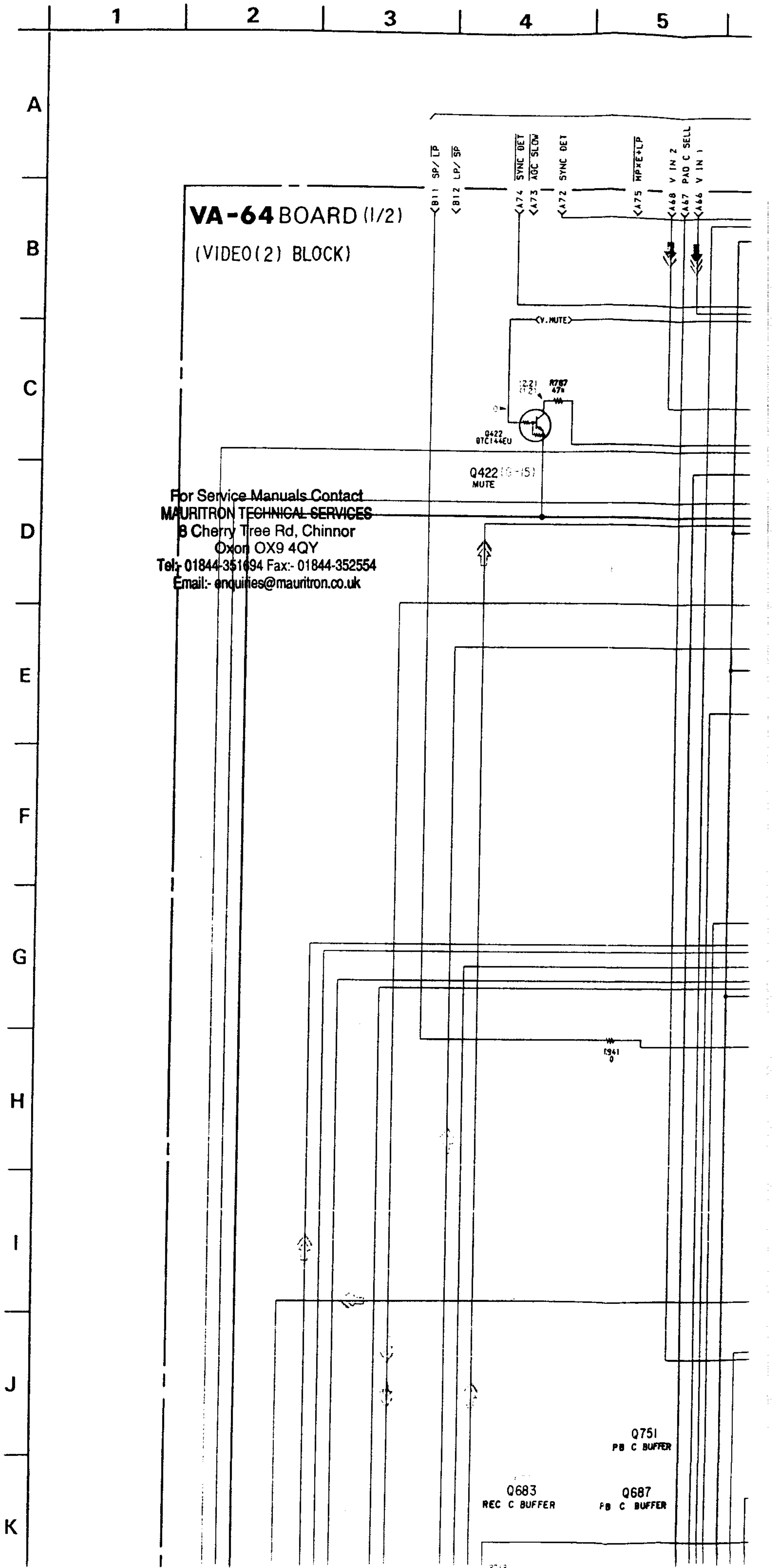


Q703	8-729-905-23	2SA1576-R
Q705	8-729-905-12	DTA144EU
Q707	8-729-904-20	FMA2
Q708	8-729-904-07	FMG2
Q711	8-729-905-12	DTA144EU
Q712	8-729-905-12	DTA144EU
Q717	8-729-905-23	2SA1576-R
Q719	8-729-905-18	DTC144EU
Q721	8-729-202-38	2SC3326N
Q722	8-729-905-35	2SC4081-R
Q724	8-729-905-23	2SA1576-R
Q727	8-729-905-45	DTA143EU
Q728	8-729-905-23	2SA1576-R
Q729	8-729-905-35	2SC4081-R
Q730	8-729-905-23	2SA1576-R
Q731	8-729-905-12	DTA144EU
Q732	8-729-905-35	2SC4081-R
Q737	8-729-905-12	DTA144EU
Q742	8-729-905-23	2SA1576-R
Q743	8-729-905-35	2SC4081-R
Q744	8-729-905-35	2SC4081-R
Q745	8-729-905-18	DTC144EU
Q746	8-729-141-48	2SB624-BV345
Q747	8-729-905-23	2SA1576-R
Q748	8-729-905-35	2SC4081-R
Q751	8-729-905-35	2SC4081-R
Q752	8-729-905-23	2SA1576-R
Q753	8-729-904-20	FMA2
Q756	8-729-905-23	2SA1576-R
Q757	8-729-905-35	2SC4081-R
Q758	8-729-905-35	2SC4081-R
Q760	8-729-905-12	DTA144EU
Q761	8-729-905-18	DTC144EU
Q762	8-729-905-18	DTC144EU
Q763	8-729-905-18	DTC144EU
Q764	8-729-905-35	2SC4081-R
Q765	8-729-905-35	2SC4081-R
Q766	8-729-905-23	2SA1576-R
Q767	8-729-824-05	3SK248
Q770	8-729-101-07	2SB798-DLDK
Q771	8-729-905-35	2SC4081-R
Q772	8-729-905-12	DTA144EU
Q773	8-729-905-12	DTA144EU
Q774	8-729-905-35	2SC4081-R
Q775	8-729-905-18	DTC144EU
Q776	8-729-921-58	DTA144TU
Q777	8-729-905-23	2SA1576-R
Q786	8-729-905-18	DTC144EU

) VIDEO (2)

VA-64 (VIDEO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-64 BOARD: 3000 series—


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
K
VA-64 BOARD (1/2)
(VIDEO(2) BLOCK)
B11 SP/LP
B12 LP/SP
A74 SYNC DET
A73 AGC SLOW
A72 SYNC DET
A75 MPXE+LP
A68 V IN 2
A67 PAO C SELL
A66 V IN 1
V.MUTE
(2.2)
(1.2)
R787
47k
0
Q422
DTC144EU
Q422 (G-15)
MUTE
R941
0
Q751
PB C BUFFER
Q683
REC C BUFFER
Q687
PB C BUFFER

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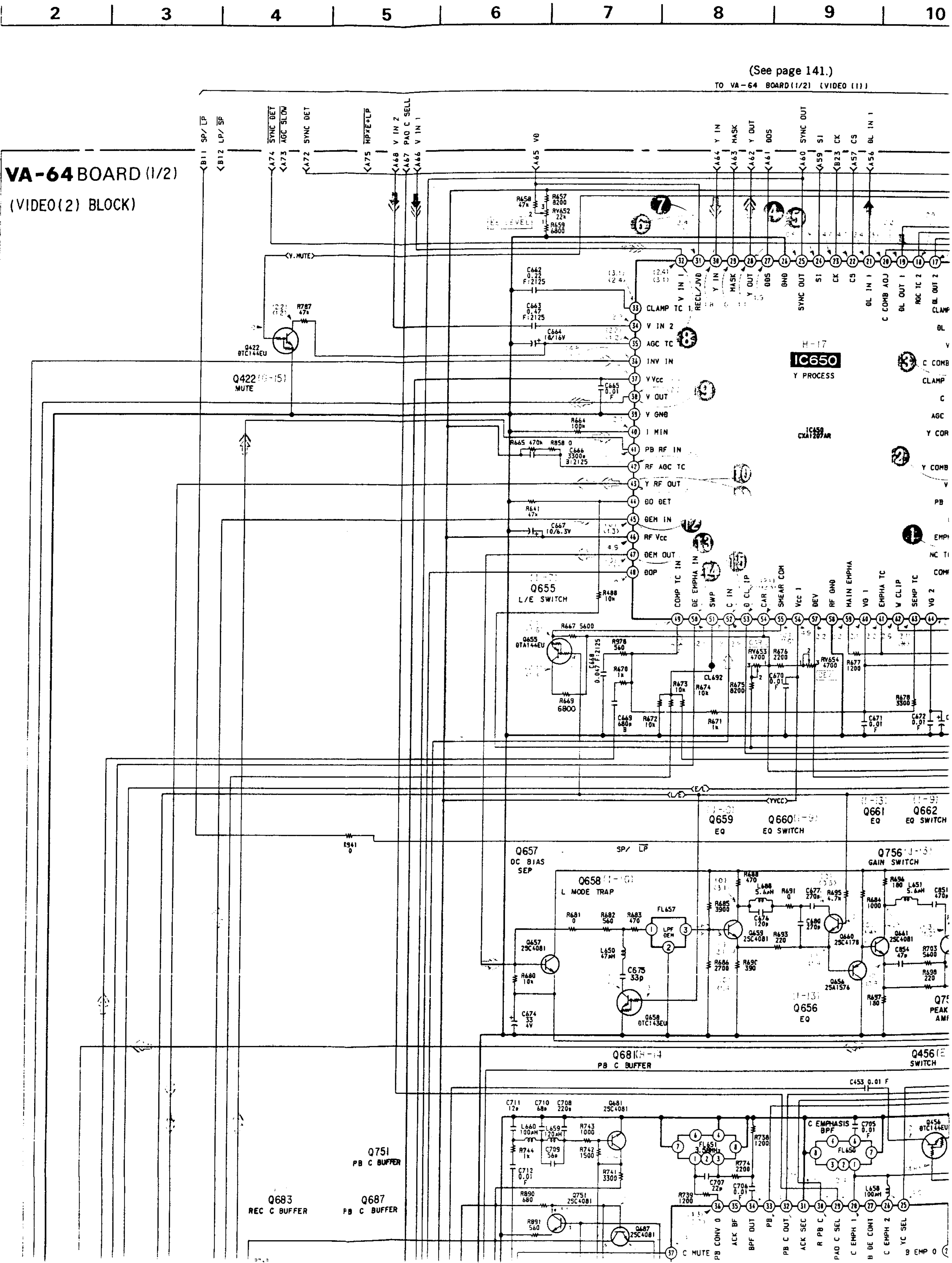
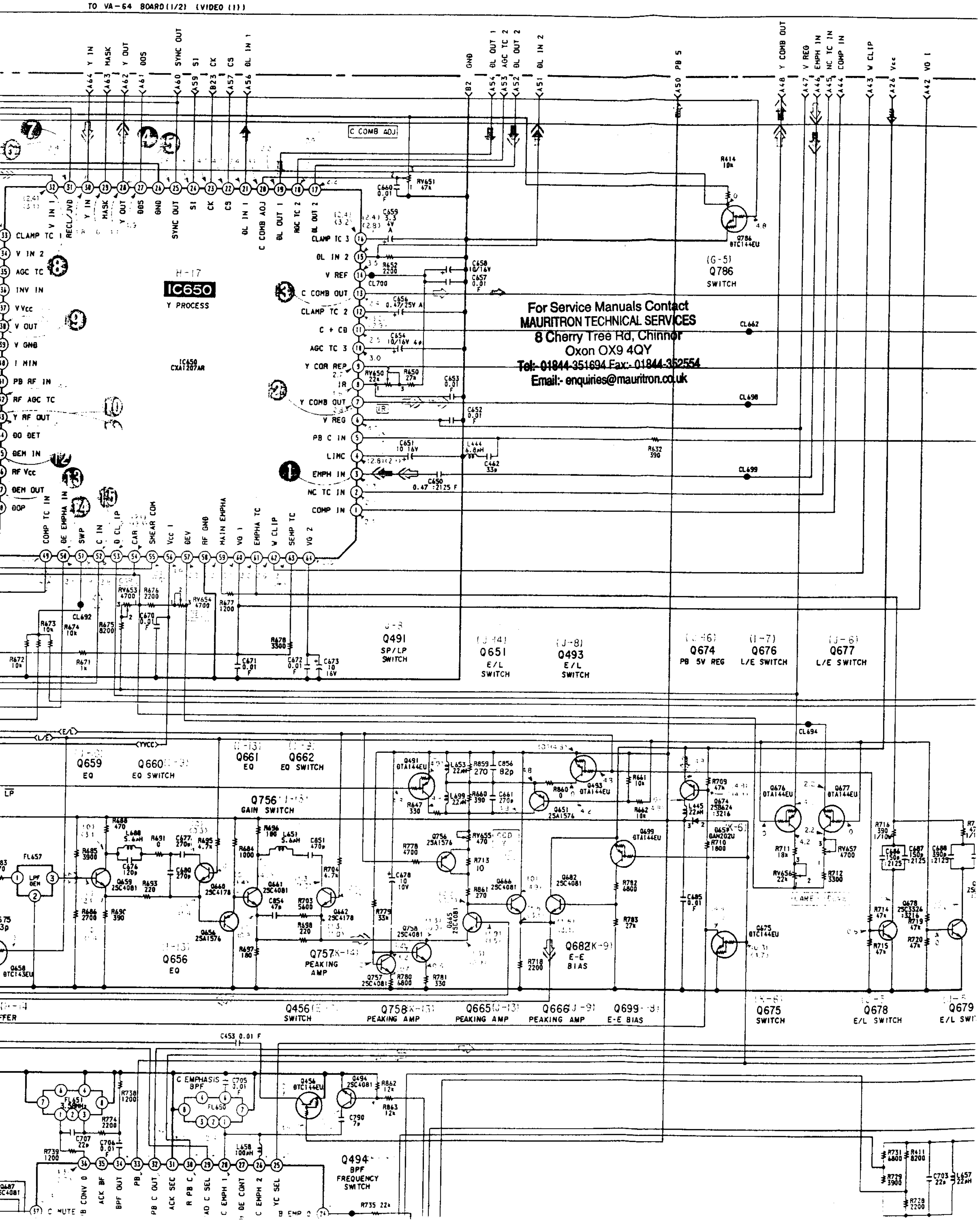
'ROCESS) SCHEMATIC DIAGRAM

BOARD : 3000 series—


2
3
4
5
6
7
8
9
10
(See page 141.)
TO VA-64 BOARD(1/2) (VIDEO(1))
VA-64 BOARD (1/2)
(VIDEO(2) BLOCK)
SP/LP
LP/SP
SYNC DET
AGC SLOW
SYNC DET
HPxE+LP
V IN 2
PAO C SELL
V IN 1
VO
Y IN
MASK
Y OUT
DOS
SYNC OUT
SI
CK
CS
DL IN 1
IC650
Y PROCESS
IC650 CXA1207AR
CLAMP TC 1
V IN 2
AGC TC
INV IN
VVcc
V OUT
Y GND
I MIN
PB RF IN
RF AGC TC
Y RF OUT
DO DET
DEM IN
RF Vcc
DEM OUT
DOP
COMP TC IN
DE EMPHA IN
SWP
C IN
D CL IP
CAR
SHEAR COM
Vcc 1
DEV
RF GND
MAIN EMPHA
VG 1
EMPHA TC
W CLIP
SEMP TC
VG 2
C COMB
CLAMP
AGC
Y COR
Y COMB
PB
C COMB ADJ
DL OUT 1
AGC TC 2
DL OUT 2
Q422
MUTE
Q422 DTC144EU
R787 47k
Y.MUTE
R658 47k
R657 8200
RV652 22k
R659 6800
C662 0.22 F:2125
C663 0.47 F:2125
C664 10/16V
C665 0.01 F
R664 100k
R665 470k
R858 0
C666 3300p B:2125
R641 47k
C667 10/6.3V
Q655
L/E SWITCH
Q655 DTA144EU
R488 10k
R667 5600
R978 560
C668 0.047 F:2125
R670 1k
R669 6800
C669 680p B
R672 10k
R673 10k
R674 10k
CL692
R675 8200
RV653 4700
R676 2200
C670 0.01 F
RV654 4700
R677 1200
R671 1k
R678 3300
C671 0.01 F
C672 0.01 F
E/L
L/E
YVCC
Q659
EQ
Q660
EQ SWITCH
Q661
EQ
Q662
EQ SWITCH
R941 0
Q657
DC BIAS SEP
SP/LP
Q756
GAIN SWITCH
Q658
L MODE TRAP
R681 0
R682 560
R683 470
FL657
LPF DEM
R688 470
L688 5.6μH
R691 0
C677 270p
R695 4.7k
R685 3900
C676 120p
C680 270p
R694 180
L651 5.6μH
C851 470p
R684 1000
Q657 2SC4081
L650 47μH
C675 33p
Q659 2SC4081
R693 220
Q660 2SC4178
Q661 2SC4081
C854 47p
R703 5600
R680 10k
R686 2700
R690 390
Q656 2SA1576
R698 220
R697 180
C674 33 4V
Q658 DTC143EU
Q656
EQ
Q75
PEAK AMP
Q681
PB C BUFFER
Q456
SWITCH
C453 0.01 F
C711 12p
C710 68p
C708 220p
Q681 2SC4081
L660 100μH
L659 120μH
R743 1000
R744 1k
C709 56p
R742 1500
FL651
R738 1200
C EMPHASIS BPF
C705 0.01 F
FL650
Q456 DTC144EU
C712 0.01 F
R741 3300
R774 2200
Q751
PB C BUFFER
R890 680
Q751 2SC4081
C707 22p
C706 0.01 F
R739 1200
L658 100μH
Q683
REC C BUFFER
Q687
PB C BUFFER
R891 560
Q687 2SC4081
C MUTE
PB CONV 0
ACK BF
BPF OUT
PB
PB C OUT
ACK SEC
R PB C
PAO C SEL
C EMPH 1
B DE CONT
C EMPH 2
YC SEL
B EMP 0

(See page 141.)


TO VA-64 BOARD(1/2) (VIDEO (1))
Y IN
MASK
Y OUT
DOS
SYNC OUT
S1
CK
CS
DL IN 1
GND
DL OUT 1
AGC TC 2
DL OUT 2
DL IN 2
PB 5
Y COMB OUT
V REG
EMPH IN
NC TC IN
COMP IN
V CLIP
Vcc
VG 1
C COMB ADJ
IC650
Y PROCESS
IC650 CXA1207AR
CLAMP TC 1
V IN 2
AGC TC
INV IN
VVcc
V OUT
V GND
I MIN
PB RF IN
RF AGC TC
Y RF OUT
DO DET
DEM IN
RF Vcc
DEM OUT
DOP
V IN 1
RECL/JVD
SI
C COMB ADJ
AGC TC 2
CLAMP TC 3
DL IN 2
V REF
C COMB OUT
CLAMP TC 2
C + CB
AGC TC 3
Y COR REP
IR
Y COMB OUT
V REG
PB C IN
LIMC
EMPH IN
NC TC IN
COMP IN
COMP TC IN
DE EMPHA IN
SWP
C IN
D CLIP
CAR
SHEAR COM
Vcc 1
DEV
RF GND
MAIN EMPHA
VG 1
EMPHA TC
W CLIP
SEMP TC
VG 2
Q786
SWITCH
Q491
SP/LP SWITCH
Q651
E/L SWITCH
Q493
E/L SWITCH
Q674
PB 5V REG
Q676
L/E SWITCH
Q677
L/E SWITCH
Q659
EQ
Q660
EQ SWITCH
Q661
EQ
Q662
EQ SWITCH
Q756
GAIN SWITCH
Q656
EQ
Q757
PEAKING AMP
Q682
E-E BIAS
FL657
LPF DEM
Q456
SWITCH
Q758
PEAKING AMP
Q665
PEAKING AMP
Q666
PEAKING AMP
Q699
E-E BIAS
Q675
SWITCH
Q678
E/L SWITCH
Q679
E/L SWITCH
C EMPHASIS BPF
FL651
FL650
Q494
BPF FREQUENCY SWITCH
C453 0.01 F
C MUTE
PB CONV 0
ACK BF
BPF OUT
PB
PB C OUT
ACK SEC
R PB C
AD C SEL
C EMPH 1
DE CONT
C EMPH 2
YC SEL
B EMP 2
R735 22k

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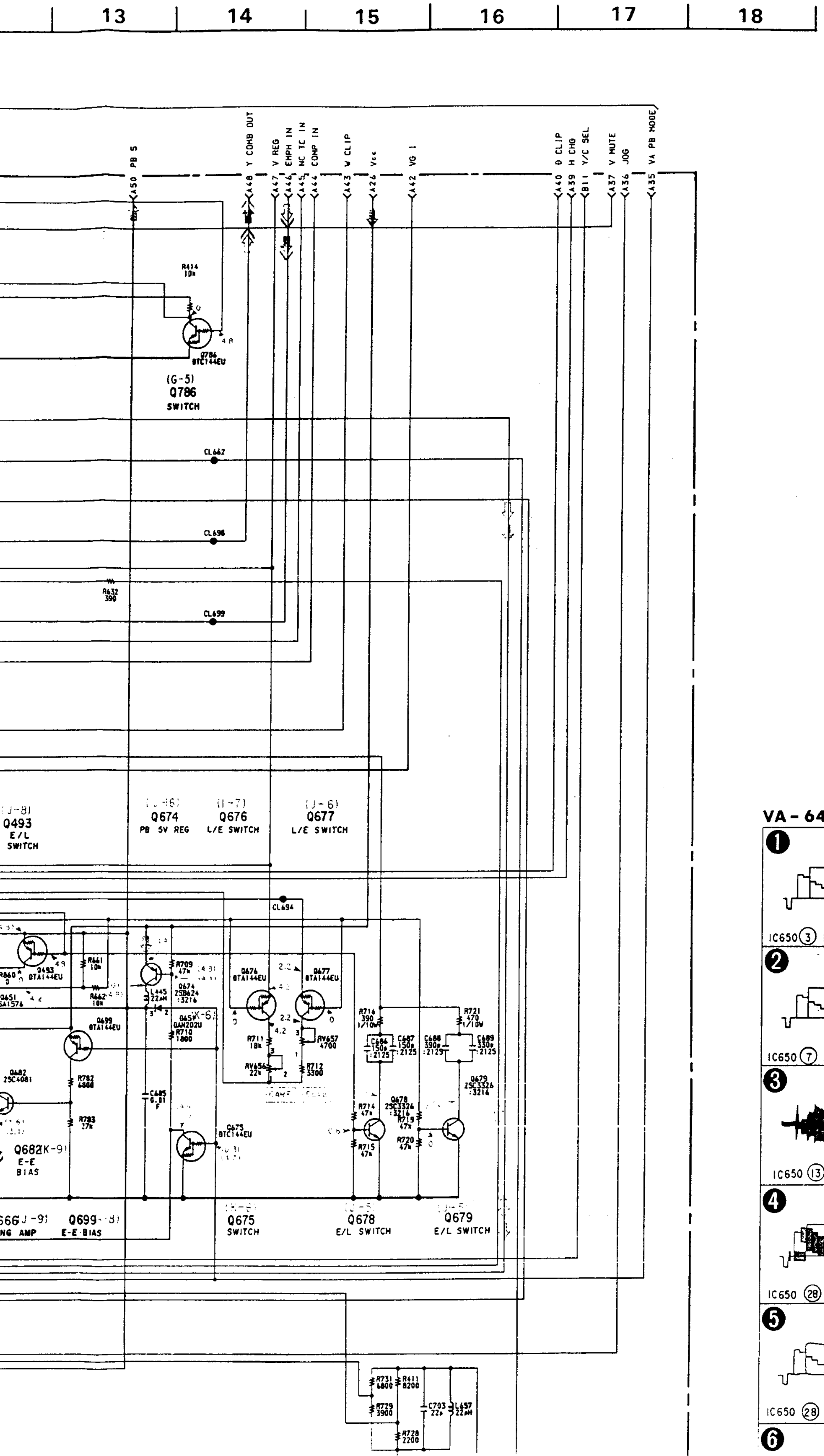
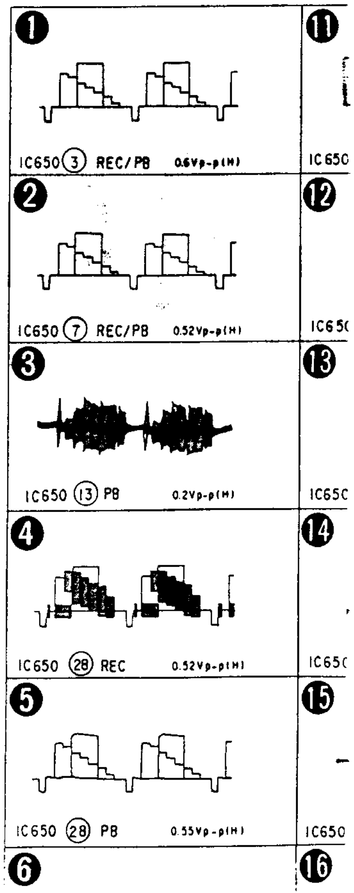
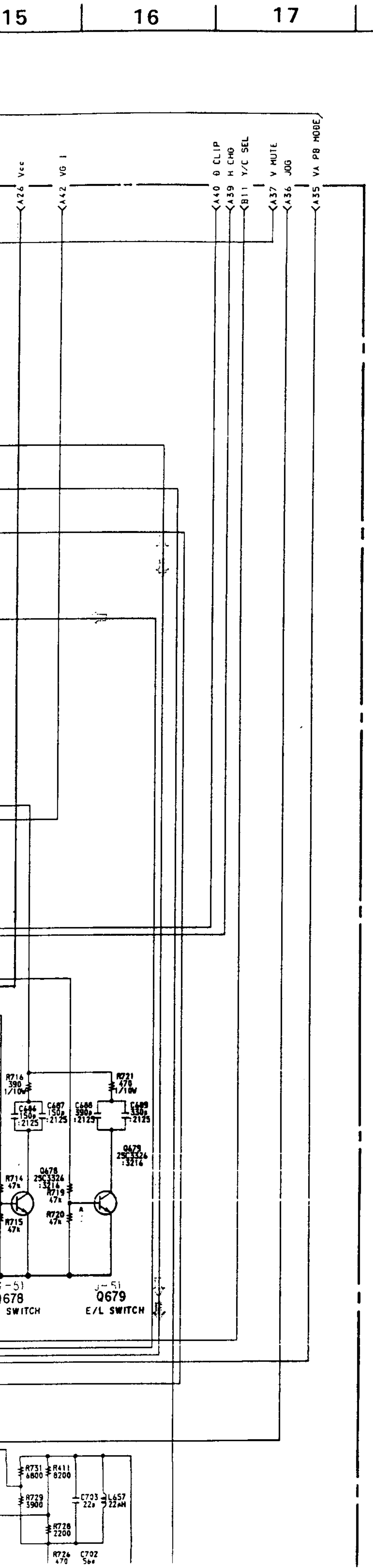

13
14
15
16
17
18
A50 PB 5
A48 Y COMB OUT
A47 V REG
A46 EMPH IN
A45 NC TC IN
A44 COMP IN
A43 W CLIP
A26 Vcc
A42 VG 1
A40 D CLIP
A39 H CHG
B11 Y/C SEL
A37 V MUTE
A36 JOG
A35 VA PB MODE
R414 10k
Q786 DTC144EU
(G-5) Q786 SWITCH
CL662
CL696
CL699
CL694
R632 390
(J-8) Q493 E/L SWITCH
(J-6) Q674 PB 5V REG
(I-7) Q676 L/E SWITCH
(J-6) Q677 L/E SWITCH
Q493 DTA144EU
R660 0
Q451 2SA1576
R661 10k
R662 10k
R709 47k
L445 22μH
Q674 2SB624 :3216
Q699 DTA144EU
D459 DAN202U
R710 1800
C485 0.01 F
R782 6800
R783 27k
Q682 2SC4081
Q676 DTA144EU
Q677 DTA144EU
R711 18k
RV656 22k
RV657 4700
R712 3300
R716 390 1/10W
C686 150p :2125
C687 150p :2125
C688 390p :2125
C689 330p :2125
R721 470 1/10W
R714 47k
R715 47k
Q678 2SC3326 :3216
R719 47k
R720 47k
Q679 2SC3326 :3216
Q675 DTC144EU
Q682 (K-9) E-E BIAS
Q666 (J-9) ...NG AMP
Q699 (J-8) E-E BIAS
(K-6) Q675 SWITCH
(J-5) Q678 E/L SWITCH
(J-5) Q679 E/L SWITCH
R731 6800
R411 8200
R729 3900
C703 22p
L657 22μH
R728 2200

VA-64 BOARD


IC650 (3) REC/PB 0.6Vp-p(H)
IC650 (7) REC/PB 0.52Vp-p(H)
IC650 (13) PB 0.2Vp-p(H)
IC650 (28) REC 0.52Vp-p(H)
IC650 (28) PB 0.55Vp-p(H)
IC650
IC650


15
16
17
18
A26 Vcc
A42 VG I
A40 Ø CLIP
A39 H CHG
B11 Y/C SEL
A37 V MUTE
A36 JOG
A35 VA PB MODE
R716 390 1/10W
R721 470 1/10W
C686 150p :2125
C687 150p :2125
C688 390p :2125
C689 330p :2125
Q679 2SC3326 :3216
Q678 2SC3326 :3216
R714 47k
R719 47k
R720 47k
R715 47k
A
Q678
SWITCH
Q679
E/L SWITCH
R731 6800
R411 8200
R729 3900
C703 22μ
L657 22μH
R728 2200
R726 470
C702 56e

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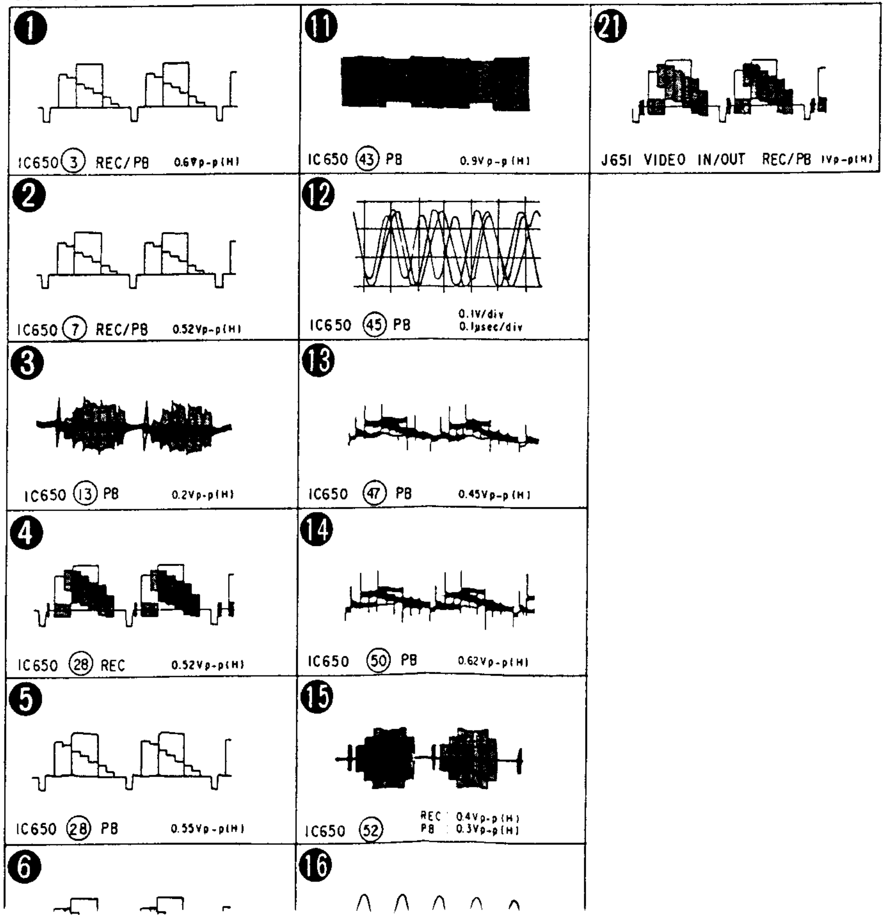
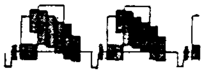
VA-64 BOARD

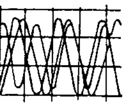


0.9Vp-p(H)

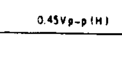
㉑



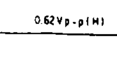
J651 VIDEO IN/OUT REC/PB 1Vp-p(H)



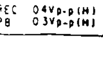
0.1V/div
0.1μsec/div



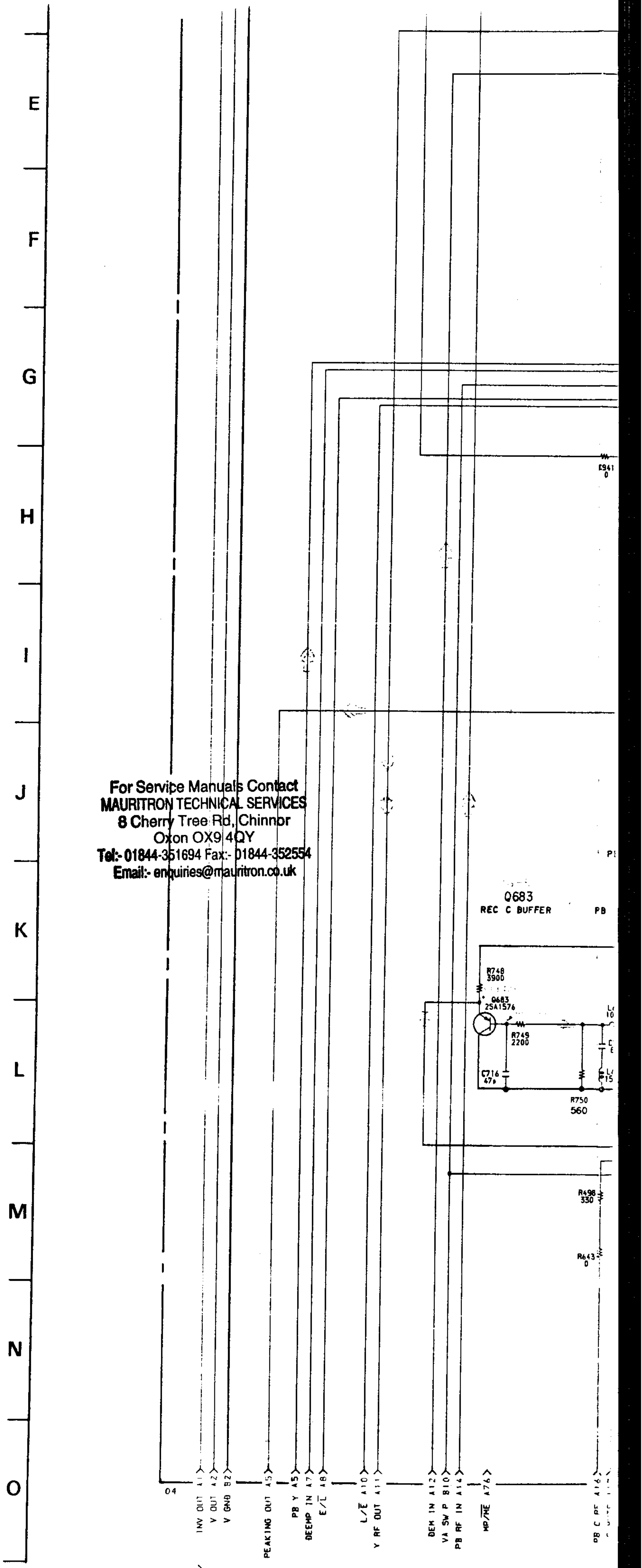
0.45Vp-p(H)



0.62Vp-p(H)



EC 0.4Vp-p(H)
PB 0.3Vp-p(H)


E
F
G
H
I
J
K
L
M
N
O
R941
0
Q683
REC C BUFFER
PB
R748
3900
Q683
2SA1576
R749
2200
C716
47p
R750
560
R498
330
R643
0
04
INV OUT A1
V OUT A2
V GND B2
PEAKING OUT A5
PB Y A5
DEEMP IN A7
E/L A8
L/E A10
Y RF OUT A11
DEM IN A12
VA SW P B10
PB RF IN A14
MP/ME A76
PB C RF A16

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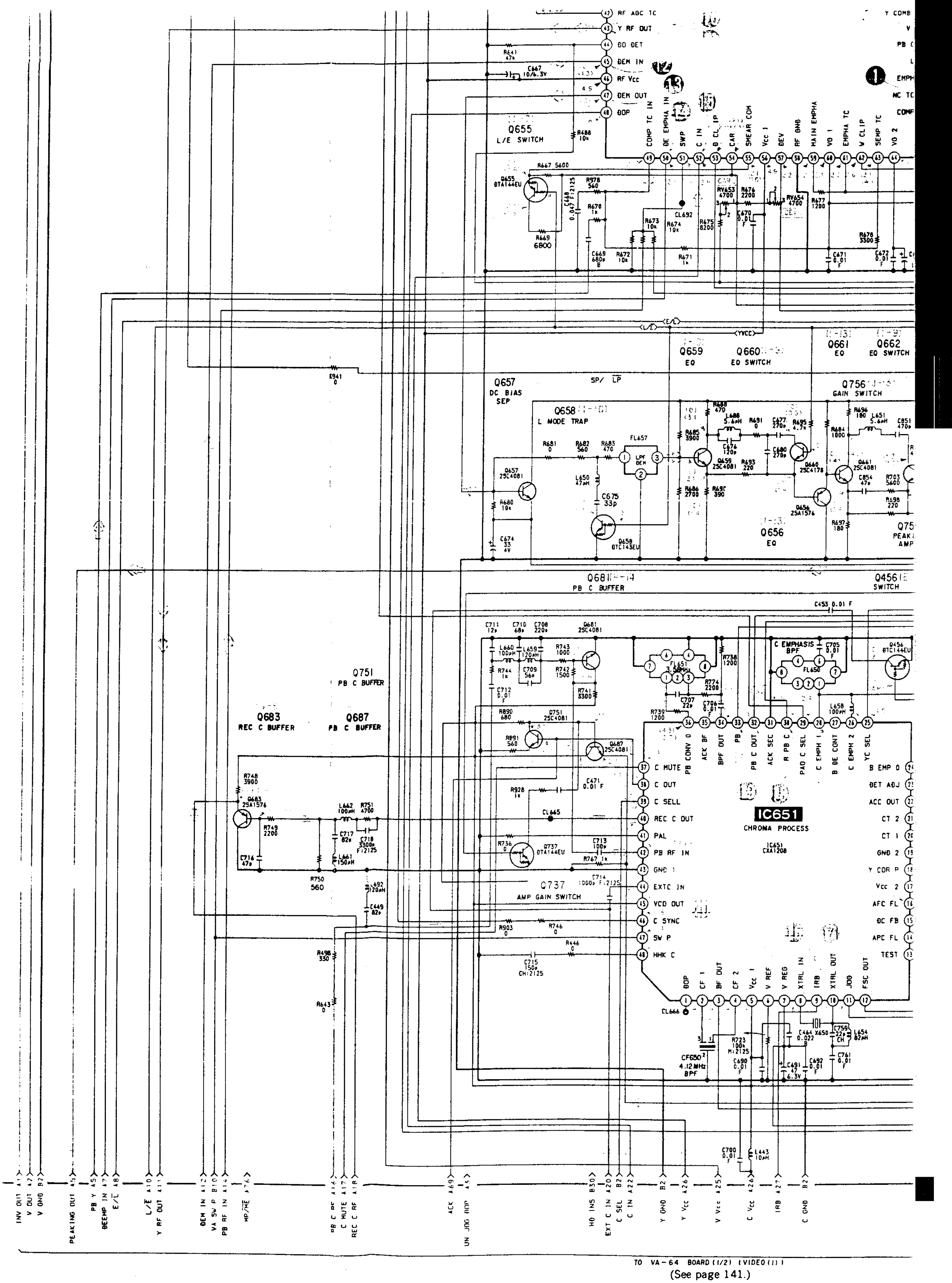
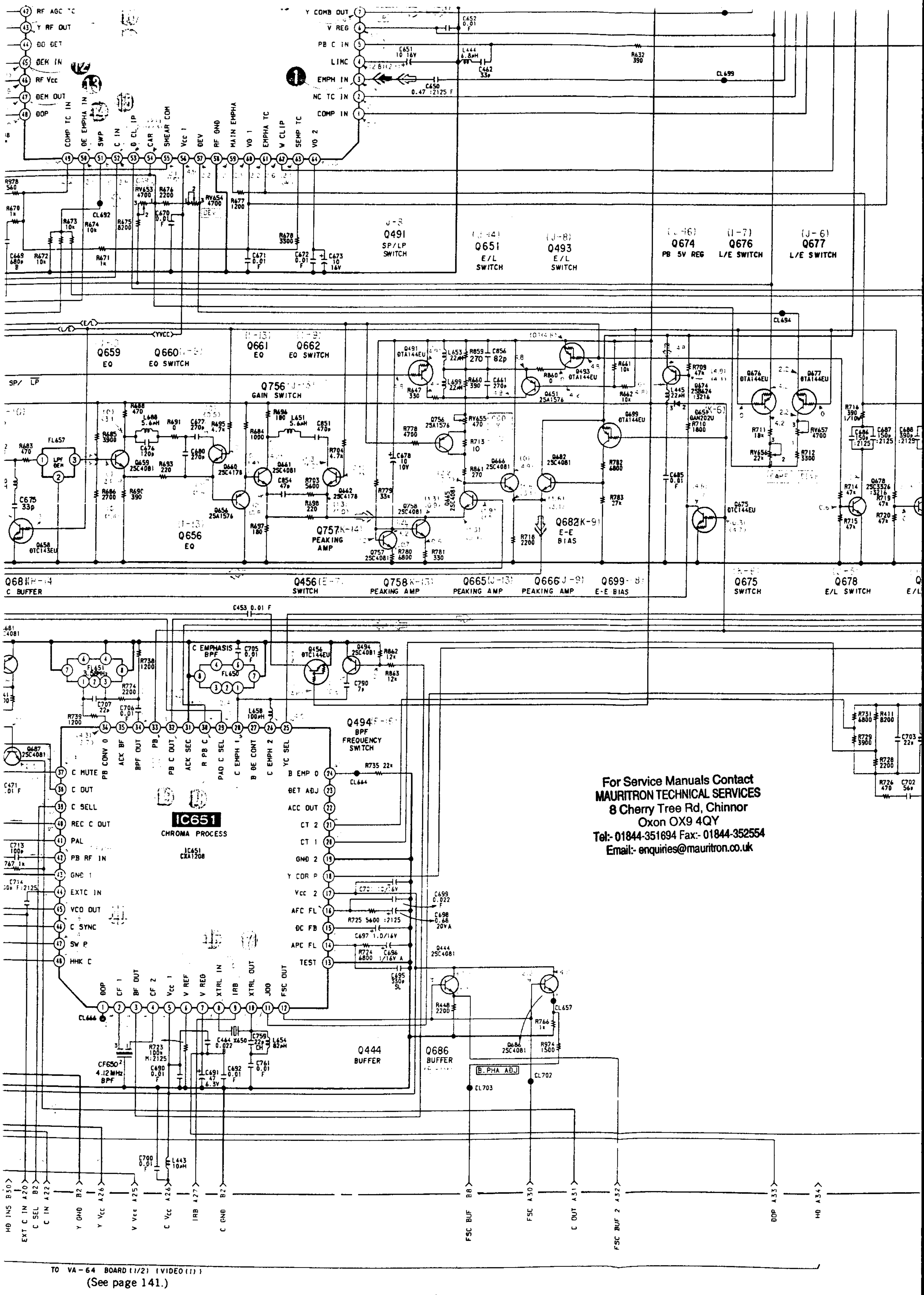
- Signal path

REC			
PB			


RF AGC TC
Y RF OUT
DO DET
DEM IN
RF Vcc
DEM OUT
DOP
Q655
L/E SWITCH
COMP TC IN
DE EMPHA IN
SWP
C IN
D CL IP
CAR
SHEAR COM
Vcc 1
DEV
RF GND
MAIN EMPHA
VD 1
EMPHA TC
V CLIP
SEMP TC
VD 2
Y COMB
NC TC
R641 47k
C667 10/6.3V
R488 10k
Q655 DTA144EU
R667 5600
R978 560
C668 0.047 F:2125
R670 1k
R669 6800
C669 680p B
R672 10k
R673 10k
R674 10k
CL692
R671 1k
R675 8200
RV653 4700
R676 2200
C670 0.01 F
RV654 4700
R677 1200
R678 3300
C671 0.01 F
C672 0.01 F
(E/L)
(L/E)
(YVCC)
Q659
EQ
Q660
EQ SWITCH
Q661
EQ
Q662
EQ SWITCH
R941 0
Q657
DC BIAS SEP
SP/ LP
Q658
L MODE TRAP
Q756
GAIN SWITCH
R681 0
R682 560
R683 470
FL657
LPF DEM
Q657 2SC4081
L650 47µH
C675 33p
R680 10k
C674 33 4V
Q658 DTC143EU
R688 470
L688 5.6µH
R691 0
C677 270p
R695 4.7k
R685 3900
C676 120p
C680 270p
Q659 2SC4081
R693 220
Q660 2SC4178
R686 2700
R690 390
Q456 2SA1576
Q656
EQ
R696 180
L651 5.6µH
C851 470p
R684 1000
Q661 2SC4081
C854 47p
R703 5600
R698 220
R697 180
Q75
PEAK AMP
Q681
PB C BUFFER
Q456
SWITCH
C453 0.01 F
C711 12p
C710 68p
C708 220p
Q681 2SC4081
L660 100µH
L659 120µH
R743 1000
R744 1k
C709 56p
R742 1500
C712 0.01 F
R741 3300
FL651 3.58MHz
R738 1200
C707 22p
R774 2200
C706 0.01 F
R739 1200
C EMPHASIS BPF
C705 0.01
FL650
Q456 DTC144EU
L658 100µH
Q751
PB C BUFFER
Q683
REC C BUFFER
Q687
PB C BUFFER
R890 680
Q751 2SC4081
R891 560
Q687 2SC4081
R748 3900
Q683 2SA1576
L662 100µH
R751 4700
R749 2200
C717 82p
C718 3300p F:2125
C716 47p
L661 150µH
R750 560
R928 1k
C471 0.01 F
CL665
R736 0
Q737 DTA144EU
C713 100p
R767 1k
C714 1000p F:2125
Q737
AMP GAIN SWITCH
L692 120µH
C449 82p
R903 0
R746 0
R446 0
R498 330
C715 150p CH:2125
R643 0
PB CONV 0
ACK BF
BPF OUT
PB
PB C OUT
ACK SEC
R PB C
PAD C SEL
C EMPH 1
B DE CONT
C EMPH 2
YC SEL
C MUTE
C OUT
C SELL
REC C OUT
PAL
PB RF IN
GND 1
EXTC IN
VCO OUT
C SYNC
SW P
HHK C
B EMP 0
DET ADJ
ACC OUT
CT 2
CT 1
GND 2
Y COR P
Vcc 2
AFC FL
DC FB
APC FL
TEST
IC651
CHROMA PROCESS
IC651 CXA1208
DOP
CF 1
BF OUT
CF 2
Vcc 1
V REF
V REG
XTRL IN
IRB
XTRL OUT
JOG
FSC OUT
CL666
CF650 4.12MHz BPF
R723 100k M:2125
C690 0.01 F
C464 0.022
X650
C759 22p CH
L654 82µH
C491 47 6.3V
C692 0.01 F
C761 0.01 F
C700 0.01 F
L443 10µH
INV OUT A1
V OUT A2
V GND B2
PEAKING OUT A5
PB Y A5
DEEMP IN A7
E/L A8
L/E A10
Y RF OUT A11
DEM IN A12
VA SW P B10
PB RF IN A14
MP/ME A16
PB C RF A16
C MUTE A17
REC C RF A18
ACK A69
UN JOG ROP A5
HD INS B30
EXT C IN A20
C SEL B2
C IN A22
Y GND B2
Y Vcc A26
V Vcc A25
C Vcc A26
IRB A27
C GND B2

TO VA-64 BOARD (1/2) (VIDEO(1))
(See page 141.)


RF AGC TC
Y RF OUT
DO DET
DEK IN
RF Vcc
DEM OUT
DOP
Y COMB OUT
V REG
PB C IN
LIMC
EMPH IN
NC TC IN
COMP IN
COMP TC IN
DE EMPHA IN
SWP
C IN
D CL IP
CAR
SHEAR COM
Vcc 1
DEV
RF GND
MAIN EMPHA
VO 1
EMPHA TC
V CLIP
SEMP TC
VO 2
Q491
SP/LP SWITCH
Q651
E/L SWITCH
Q493
E/L SWITCH
Q674
PB 5V REG
Q676
L/E SWITCH
Q677
L/E SWITCH
Q659
EQ
Q660
EQ SWITCH
Q661
EQ
Q662
EQ SWITCH
Q756
GAIN SWITCH
FL657
LPF DEM
Q656
EQ
Q757
PEAKING AMP
Q682
E-E BIAS
Q68
C BUFFER
Q456
SWITCH
Q758
PEAKING AMP
Q665
PEAKING AMP
Q666
PEAKING AMP
Q699
E-E BIAS
Q675
SWITCH
Q678
E/L SWITCH
C EMPHASIS BPF
FL651 3.58MHz
FL650
Q494
BPF FREQUENCY SWITCH
IC651
CHROMA PROCESS
IC651 CXA1208
PB CONV O
ACK BF
BPF OUT
PB
PB C OUT
ACK SEC
R PB C
PAD C SEL
C EMPH 1
B DE CONT
C EMPH 2
YC SEL
C MUTE
C OUT
C SELL
REC C OUT
PAL
PB RF IN
GND 1
EXTC IN
VCO OUT
C SYNC
SW P
HHK C
B EMP O
BET ADJ
ACC OUT
CT 2
CT 1
GND 2
Y COR P
Vcc 2
AFC FL
DC FB
APC FL
TEST
DOP
CF 1
BF OUT
CF 2
Vcc 1
V REF
V REG
XTRL IN
IRB
XTRL OUT
J00
FSC OUT
CF650 4.12MHz BPF
Q444
BUFFER
Q686
BUFFER
B.PHA ADJ
HD INS B30
EXT C IN A20
C SEL B2
C IN A22
Y GND B2
Y Vcc A26
V Vcc A25
C Vcc A26
IRB A27
C GND B2
FSC BUF B8
FSC A30
C OUT A31
FSC BUF 2 A32
DOP A33
HD A34

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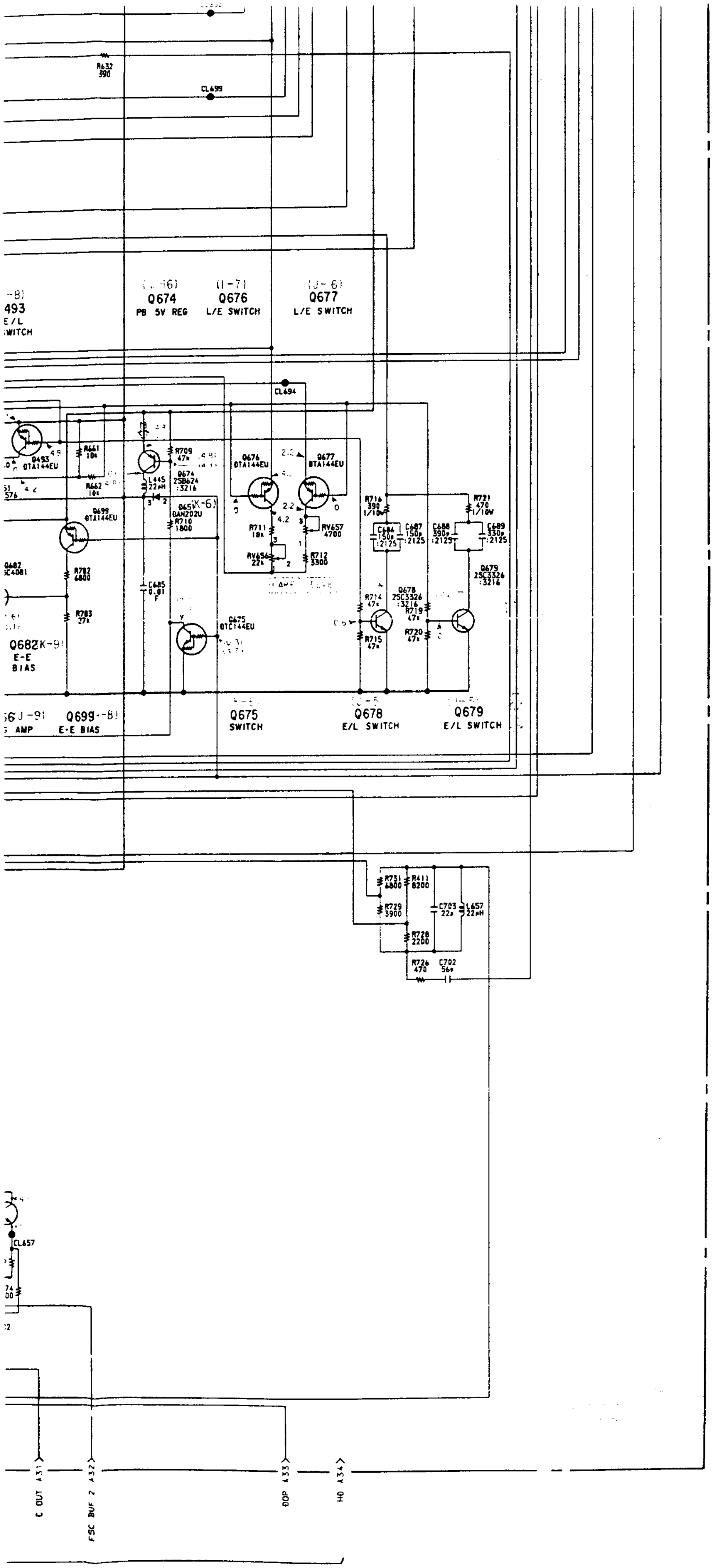
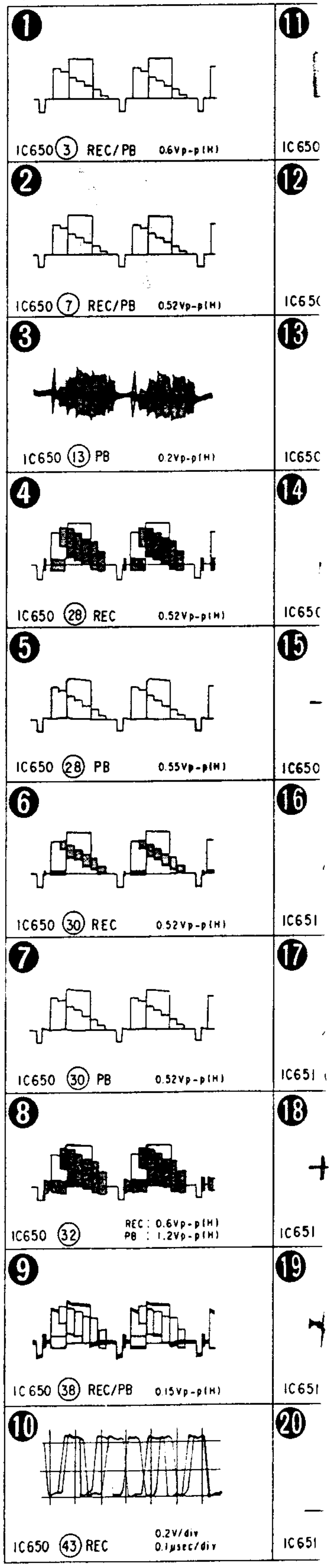
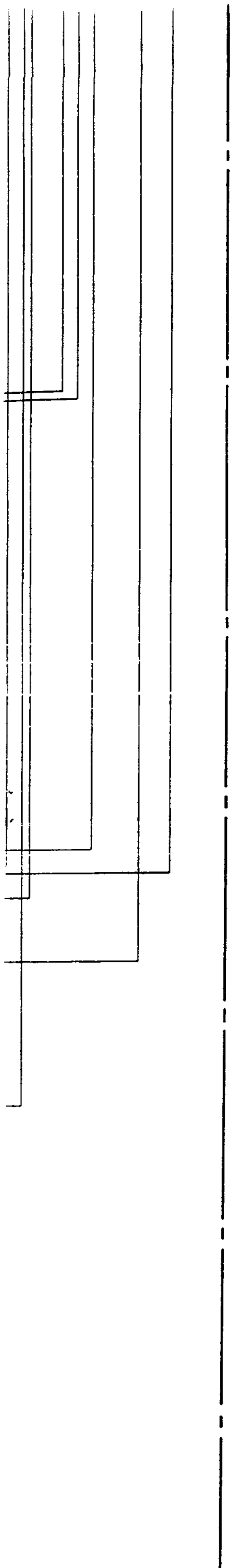
TO VA-64 BOARD (1/2) (VIDEO (1))
(See page 141.)


R632 390
CL699
(J-6) Q674 PB 5V REG
(I-7) Q676 L/E SWITCH
(J-6) Q677 L/E SWITCH
Q493 E/L SWITCH
CL694
Q493 DTA144EU
R661 10k
R662 10k
R709 47k
Q674 2SB624 :3216
L445 22μH
D451 DAN202U
R710 1800
Q699 DTA144EU
Q676 DTA144EU
Q677 DTA144EU
R711 18k
RV656 22k
RV657 4700
R712 3300
R716 390 1/10W
C686 150p :2125
C687 150p :2125
C688 390p :2125
C689 330p :2125
R721 470 1/10W
Q682 2SC4081
R782 6800
R783 27k
C685 0.01 F
Q675 DTC144EU
R714 47k
R715 47k
Q678 2SC3326 :3216
R719 47k
R720 47k
Q679 2SC3326 :3216
Q682 (K-9) E-E BIAS
AMP
Q699 (K-8) E-E BIAS
Q675 SWITCH
Q678 E/L SWITCH
Q679 E/L SWITCH
R731 6800
R411 8200
R729 3900
C703 22p
L657 22μH
R728 2200
R726 470
C702 56p
CL657
C OUT A31
FSC BUF 2 A32
DOP A33
HD A34

VA-64 BOARD

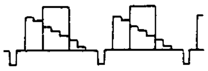

❶ IC650 ③ REC/PB 0.6Vp-p(H)
❷ IC650 ⑦ REC/PB 0.52Vp-p(H)
❸ IC650 ⑬ PB 0.2Vp-p(H)
❹ IC650 ㉘ REC 0.52Vp-p(H)
❺ IC650 ㉘ PB 0.55Vp-p(H)
❻ IC650 ㉚ REC 0.52Vp-p(H)
❼ IC650 ㉚ PB 0.52Vp-p(H)
❽ IC650 ㉜ REC : 0.6Vp-p(H) PB : 1.2Vp-p(H)
❾ IC650 ㊳ REC/PB 0.15Vp-p(H)
❿ IC650 ㊸ REC 0.2V/div 0.1μsec/div
⓫ IC650
⓬ IC650
⓭ IC650
⓮ IC650
⓯ IC650
⓰ IC651
⓱ IC651
⓲ IC651
⓳ IC651
⓴ IC651



no mark : REC/PB mode (VTR)
(   ) : REC mode
(   ) : PB mode
* Impossible to measure the voltage of the marked points

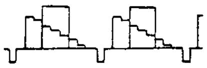
VA-64 BOARD

❶



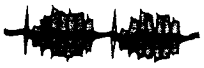
IC650 ③ REC/PB 0.6Vp-p(H)

❷



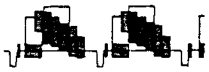
IC650 ⑦ REC/PB 0.52Vp-p(H)

❸



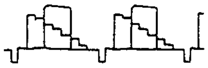
IC650 ⑬ PB 0.2Vp-p(H)

❹



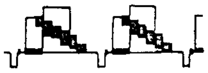
IC650 ㉘ REC 0.52Vp-p(H)

❺



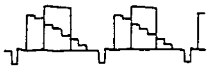
IC650 ㉘ PB 0.55Vp-p(H)

❻



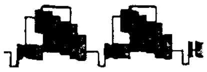
IC650 ㉚ REC 0.52Vp-p(H)

❼



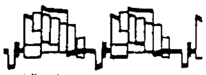
IC650 ㉚ PB 0.52Vp-p(H)

❽



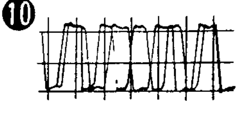
IC650 ㉜ REC : 0.6Vp-p(H) PB : 1.2Vp-p(H)

❾



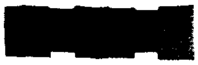
IC650 ㊳ REC/PB 0.15Vp-p(H)

❿



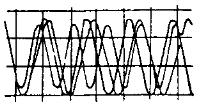
IC650 ㊸ REC 0.2V/div 0.1μsec/div

⓫



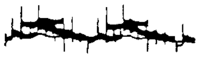
IC650 ㊸ PB 0.9Vp-p(H)

⓬



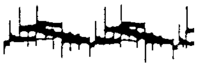
IC650 ㊺ PB 0.1V/div 0.1μsec/div

⓭



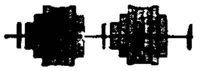
IC650 ㊼ PB 0.45Vp-p(H)

⓮



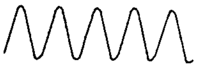
IC650 ㊿ PB 0.62Vp-p(H)

⓯



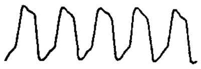
IC650 (52) REC : 0.4Vp-p(H) PB : 0.3Vp-p(H)

⓰



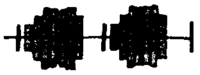
IC651 ⑧ REC/PB 0.16Vp-p(3.58MHz)

⓱



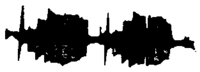
IC651 ⑩ REC/PB 0.16Vp-p(3.58MHz)

⓲



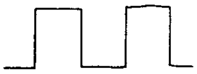
IC651 ㉚ REC 0.18Vp-p(H)

⓳



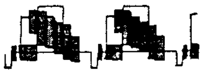
IC651 ㉜ PB 0.3Vp-p(H)

⓴



IC651 ㊼ REC/PB 4.8Vp-p(2V)

(21)



J651 VIDEO IN/OUT REC/PB 1Vp-p(H)

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Oxon OX9 4QY
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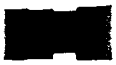
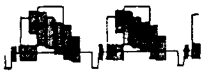
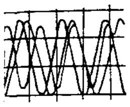


0.9Vp-p (H)

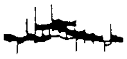
㉑



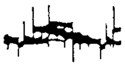
J651 VIDEO IN/OUT REC/PB 1Vp-p(H)



0.1V/div
0.1μsec/div

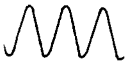


0.45Vp-p (H)

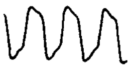


0.62Vp-p (H)

REC : 0.4Vp-p (H)
PB : 0.3Vp-p (H)



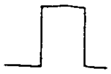
'PB 0.16Vp-p (3.58MHz)



PB 0.16Vp-p (3.58MHz)

0.18Vp-p (H)

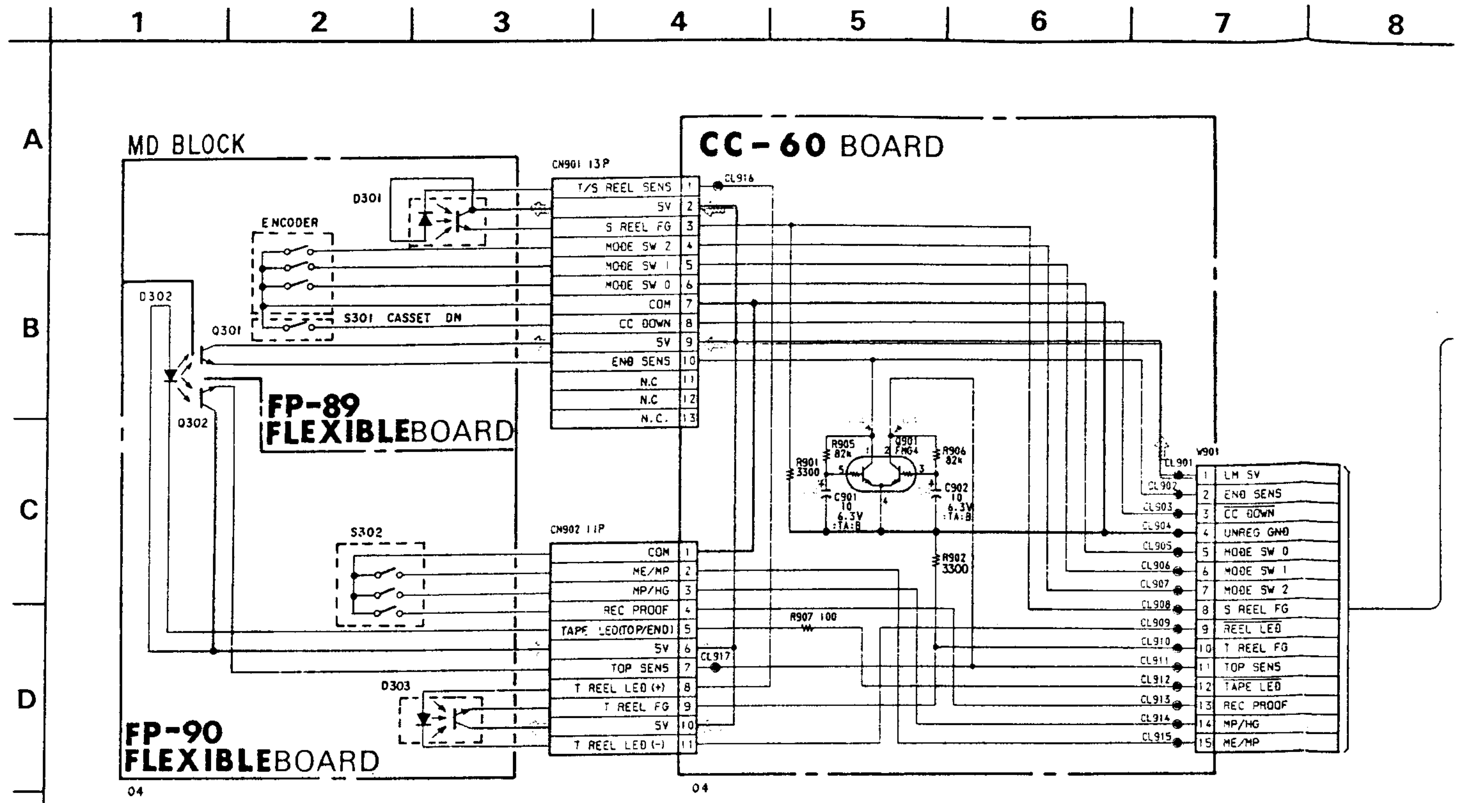
0.3Vp-p (H)



EC/PB 4.8Vp-p (2V)

SS-134 (R/P AMP, SERVO, SYSTEM CONTROL), CC-60 (RELAY), FP-89 (MODE SWITCH, SENSOR), FP-90 (TAPE SELECT SW

—Ref. No. SS-134, CC-60 BOARDS : 2000 series, FP-89, FP-90 BOARDS : 5000 series—


1
2
3
4
5
6
7
8
A
B
C
D
MD BLOCK
CC-60 BOARD
D301
ENCODER
D302
Q301
S301 CASSET DN
Q302
FP-89 FLEXIBLEBOARD
CN901 13P
T/S REEL SENS
5V
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
COM
CC DOWN
5V
END SENS
N.C
N.C
N.C.
CL916
R905 82k
Q901 FMG4
R906 82k
R901 3300
C901 10 6.3V :TA:B
C902 10 6.3V :TA:B
R902 3300
R907 100
W901
CL901
CL902
CL903
CL904
CL905
CL906
CL907
CL908
CL909
CL910
CL911
CL912
CL913
CL914
CL915
1 LM 5V
2 END SENS
3 CC DOWN
4 UNREG GND
5 MODE SW 0
6 MODE SW 1
7 MODE SW 2
8 S REEL FG
9 REEL LED
10 T REEL FG
11 TOP SENS
12 TAPE LED
13 REC PROOF
14 MP/HG
15 ME/MP
S302
CN902 11P
COM
ME/MP
MP/HG
REC PROOF
TAPE LED(TOP/END)
5V
TOP SENS
T REEL LED (+)
T REEL FG
5V
T REEL LED (-)
CL917
D303
FP-90 FLEXIBLEBOARD
04
04

E

F

G

H

I

J

K

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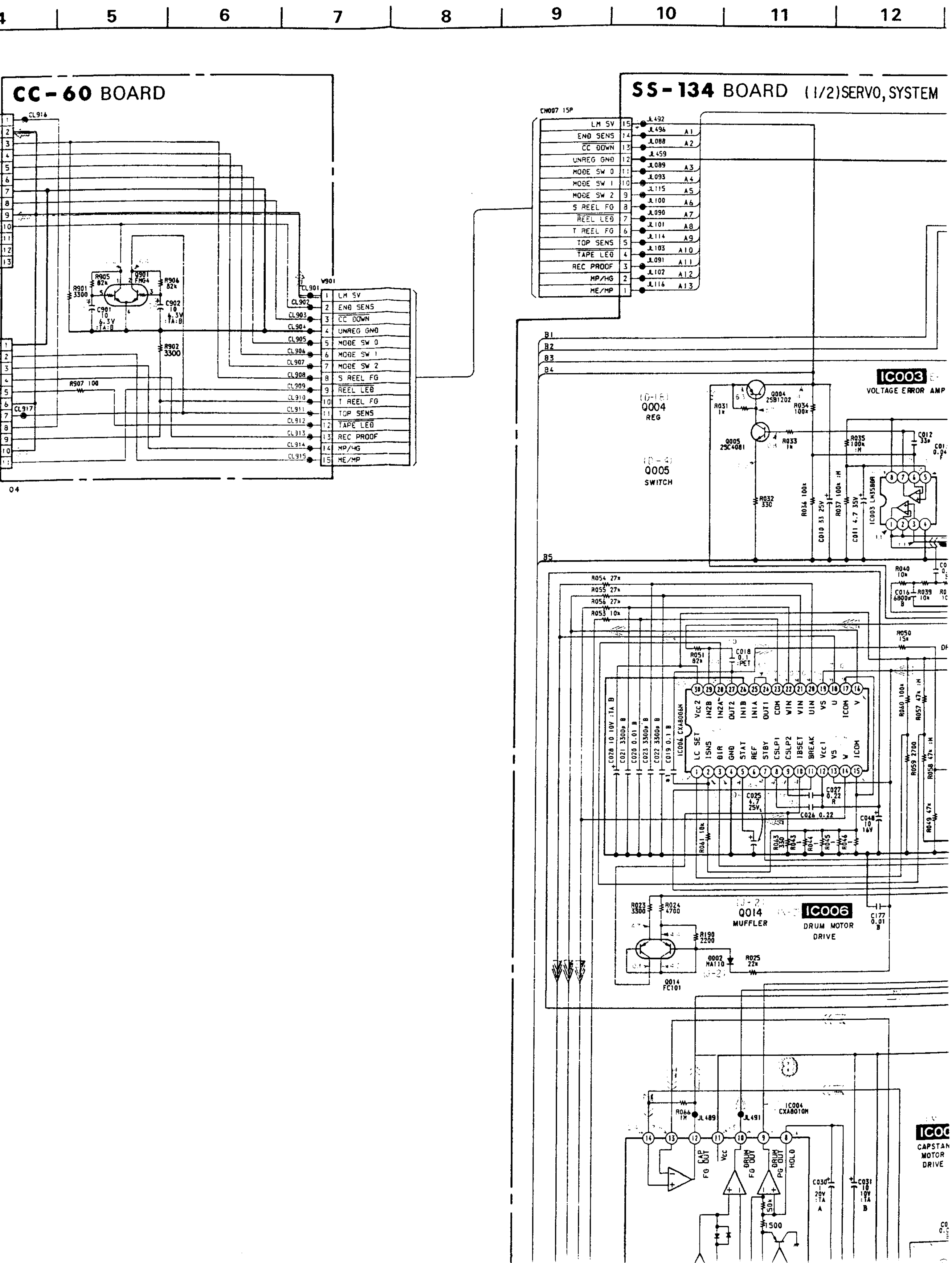
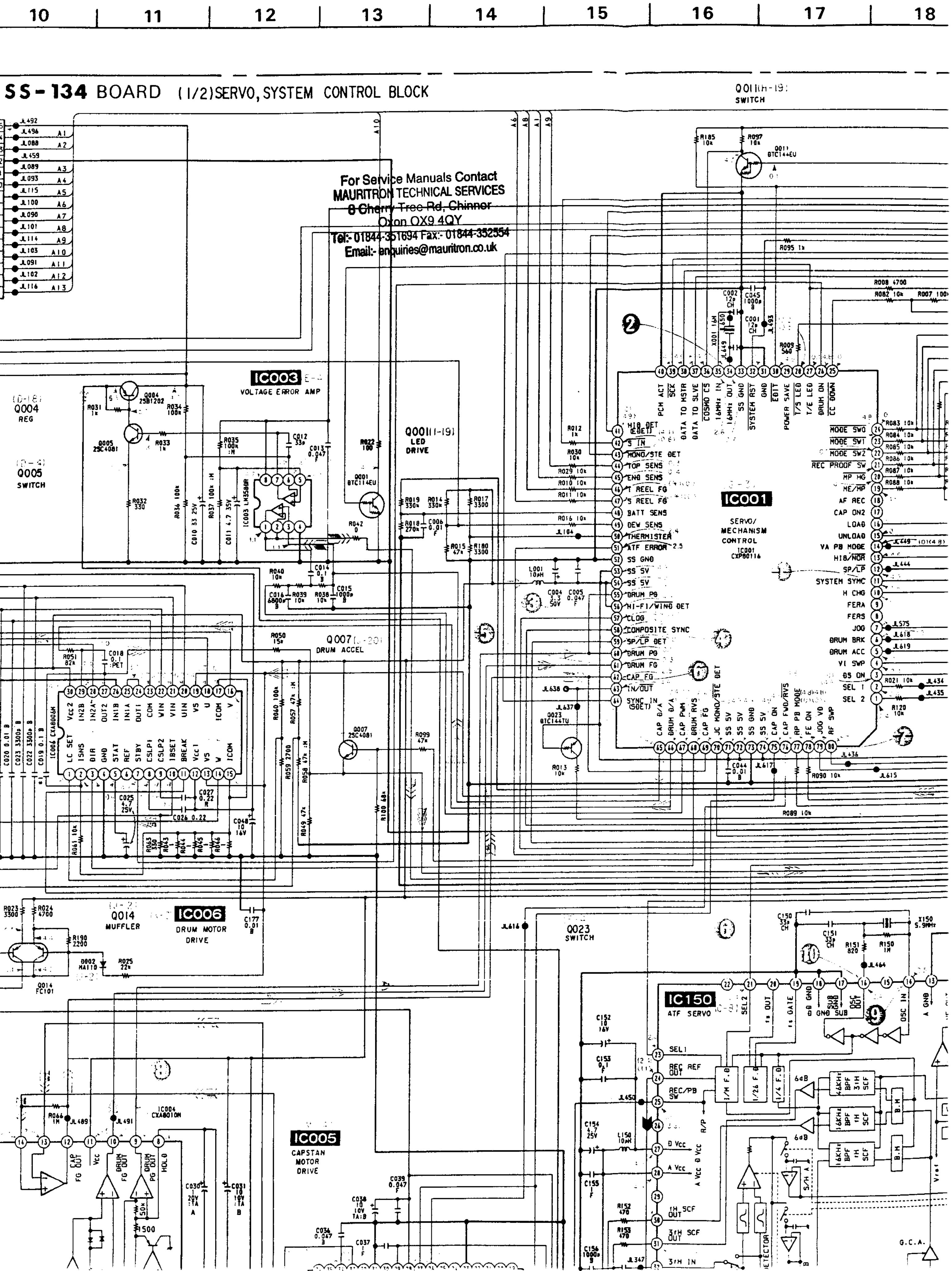
(RELAY), FP-89 (MODE SWITCH, SENSOR), FP-90 (TAPE SELECT SWITCH, SENSOR) SCHEMATIC DIAGRAM

BOARDS : 5000 series—



4
5
6
7
8
9
10
11
12
CC-60 BOARD
SS-134 BOARD (1/2)SERVO, SYSTEM
CN007 15P
LM SV
END SENS
CC DOWN
UNREG GND
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
REEL LED
T REEL FG
TOP SENS
TAPE LED
REC PROOF
MP/HG
ME/MP
W901
CL901
CL902
CL903
CL904
CL905
CL906
CL907
CL908
CL909
CL910
CL911
CL912
CL913
CL914
CL915
CL916
CL917
R901 3300
R905 82k
Q901 FMG4
R906 82k
C901 10 6.3V :TA:B
C902 10 6.3V :TA:B
R902 3300
R907 100
B1
B2
B3
B4
B5
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
IC003
VOLTAGE ERROR AMP
Q004 2SB1202
Q004 REG
Q005 2SC4081
Q005 SWITCH
R031 1k
R032 330
R033 1k
R034 100k
R035 100k :H
R036 100k
R037 100k :H
C010 33 25V
C011 4.7 35V
IC003 LM358M
C012 33p
R040 10k
C016 6800p B
R039 10k
R050 15k
R054 27k
R055 27k
R056 27k
R053 10k
R051 82k
C018 0.1 :PET
IC006 CXA8006H
VCC2
IN2B
IN2A
OUT2
IN1B
IN1A
OUT1
COM
WIN
VIN
UIN
VS
U
ICOM
V
LC SET
ISNS
DIR
GND
STAT
REF
STBY
CSLP1
CSLP2
IBSET
BREAK
Vcc1
VS
W
ICOM
C028 10 10V :TA B
C021 3300p B
C020 0.01 B
C023 3300p B
C022 3300p B
C019 0.1 B
C025 4.7 25V
C027 0.22 R
C026 0.22
C048 10 16V
R061 10k
R063 330
R060 100k
R057 47k :H
R059 2700
R058 47k :H
R049 47k
Q014 MUFFLER
IC006
DRUM MOTOR DRIVE
R023 3300
R024 4700
R190 2200
D002 MA110
R025 22k
Q014 FC101
C177 0.01 B
R066 1M
JL489
JL491
IC004 CXA8010M
CAP FG OUT
Vcc
DRUM FG OUT
DRUM PG OUT
HOLD
C030 20V :TA A
C031 10 10V :TA B
50k
1500
CAPSTAN MOTOR DRIVE

SS-134 BOARD (1/2)SERVO, SYSTEM CONTROL BLOCK


10
11
12
13
14
15
16
17
18
Q011 (H-19)
SWITCH
Q011 DTC144EU
IC003
VOLTAGE ERROR AMP
IC003 LM358BR
Q004
REG
Q004 2SB1202
Q005
SWITCH
Q005 2SC4081
Q001 (I-19)
LED
DRIVE
Q001 DTC114EU
IC001
SERVO/
MECHANISM
CONTROL
IC001 CXP80116
PCM ACT
SCK
DATA TO MSTR
DATA TO SLVE
COSMO CS
16MHz IN
16MHz OUT
SS GND
SYSTEM RST
GND
EDIT
POWER SAVE
T/S LED
DRUM ON
CC DOWN
HI8 DET (E.DET)
S IN
MONO/STE DET
TOP SENS
END SENS
T REEL FG
S REEL FG
BATT SENS
DEW SENS
THERMISTER
ATF ERROR
SS GND
SS 5V
SS 5V
DRUM PB
HI-FI/WIND DET
CLOG
COMPOSITE SYNC
SP/LP DET
DRUM PG
DRUM FG
CAP FG
IN/OUT
SYNC IN (SDET)
CAP D/A
DRUM D/A
DRUM RVS
CAP FG
JC MONO/STE DET
SS 5V
SS 5V
SS GND
SS 5V
CAP ON
CAP FWD/RVS
RP PB MODE
FE ON
JOG VD
RF SWP
MODE SW0
MODE SW1
MODE SW2
REC PROOF SW
MP HG
ME/MP
AF REC
CAP ON2
LOAD
UNLOAD
VA PB MODE
HI8/NOR
SP/LP
SYSTEM SYNC
H CHG
FERA
FERS
JOG
DRUM BRK
DRUM ACC
VI SWP
DS ON
SEL 1
SEL 2
Q007
DRUM ACCEL
Q007 2SC4081
IC006 CXA8006M
Q014
MUFFLER
Q014 FC101
IC006
DRUM MOTOR
DRIVE
Q023
SWITCH
Q023 DTC144TU
IC150
ATF SERVO
SEL1
REC REF OUT
REC/PB SW
D Vcc
A Vcc
1H SCF OUT
3/H SCF OUT
3fH IN
IC004 CXA8010M
IC005
CAPSTAN
MOTOR
DRIVE
CAP FG OUT
Vcc
DRUM FG OUT
DRUM PG OUT
HOLD
G.C.A.
X150 5.9MHz

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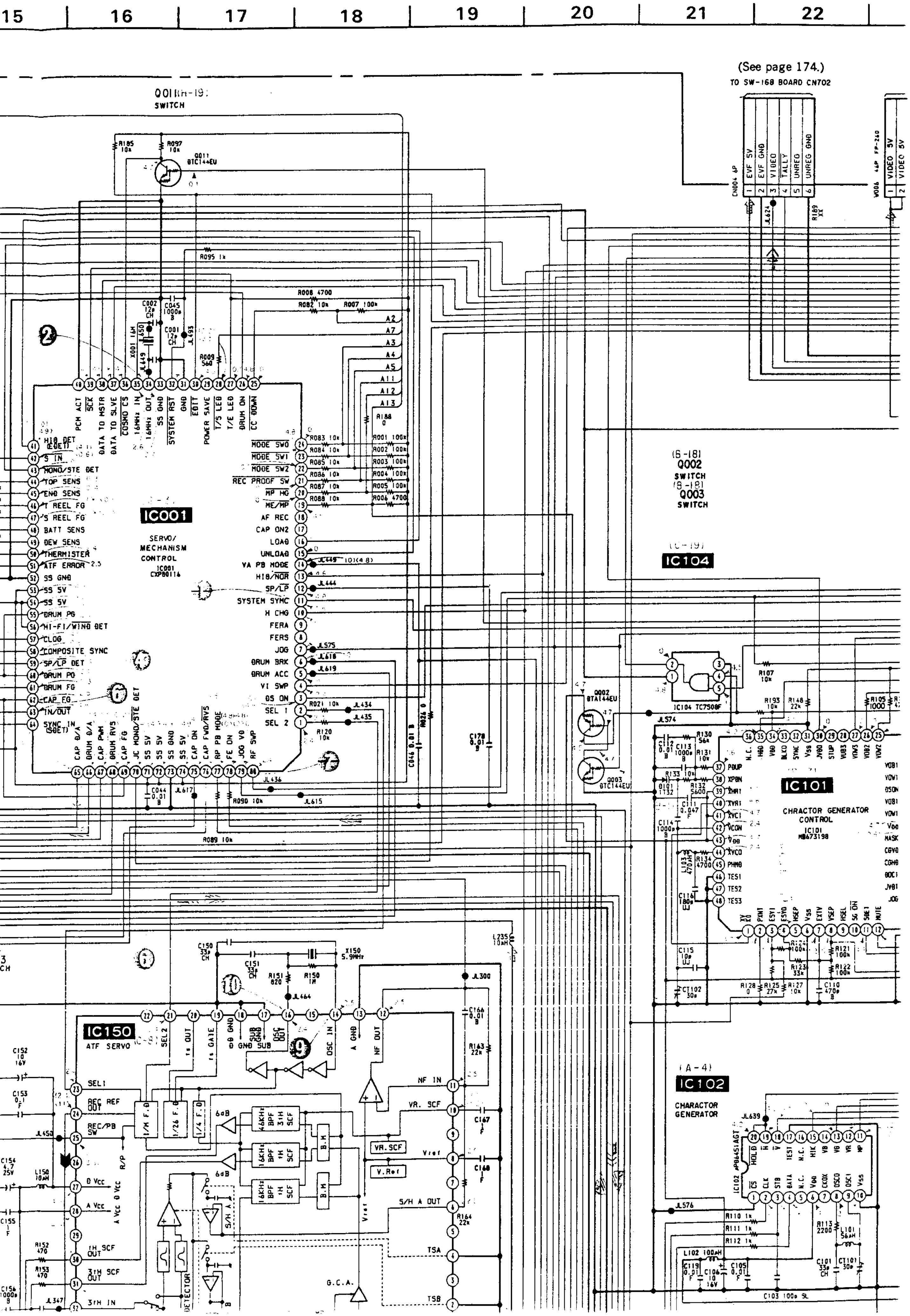
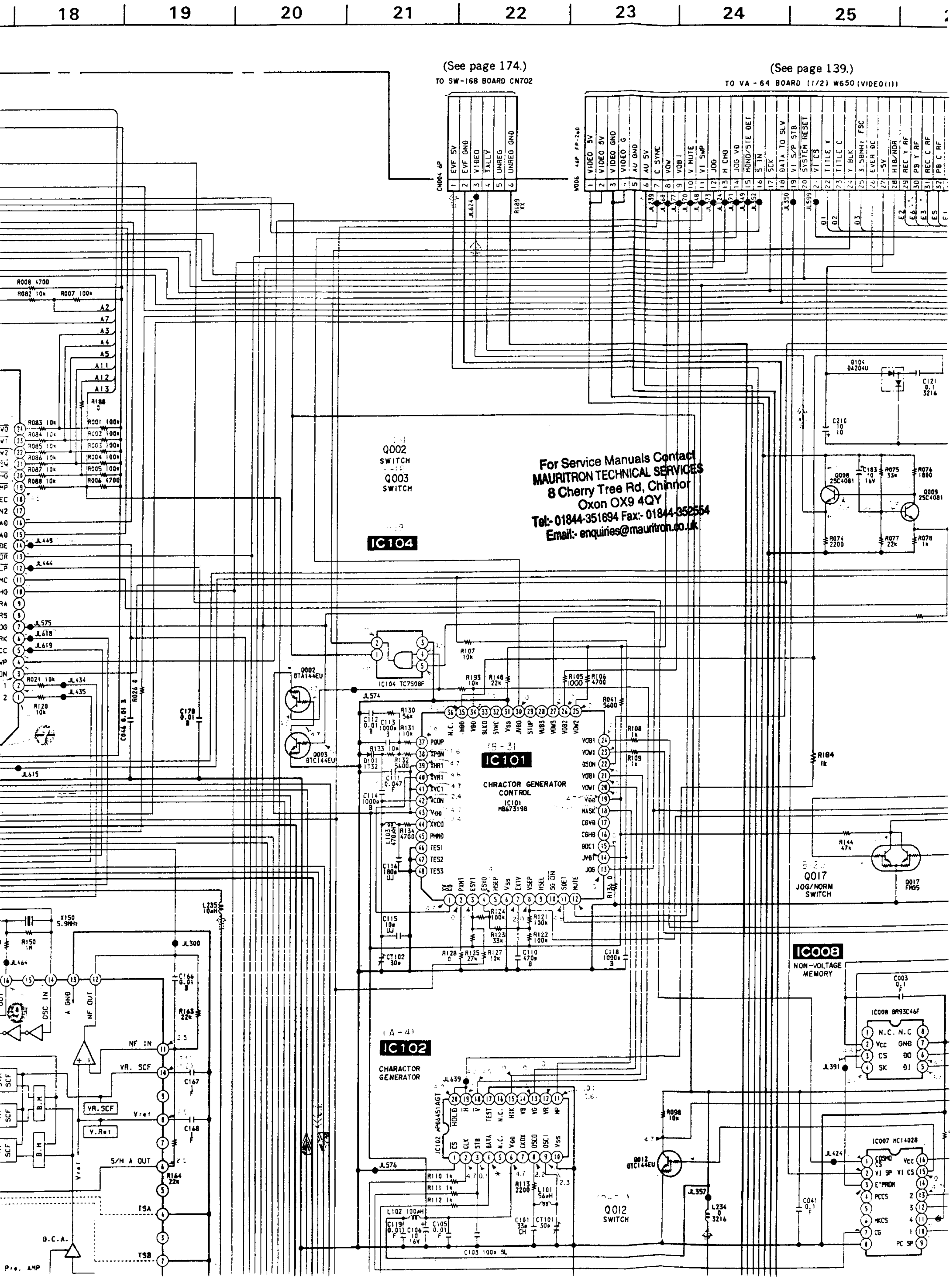

(See page 174.)
TO SW-168 BOARD CN702
15
16
17
18
19
20
21
22
Q011 (H-19)
SWITCH
Q011
DTC144EU
R185 10k
R097 10k
R095 1k
R008 4700
R082 10k
R007 100k
CN004 6P
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
R189 XX
VD06 46P FP-240
VIDEO 5V
VIDEO 5V
C002 12p CH
C045 1000p B
C001 12p CH
X001 16M
R009 560
PCM ACT
SCK
DATA TO MSTR
DATA TO SLVE
COSMO CS
16MHz IN
16MHz OUT
SS GND
SYSTEM RST
GND
EDIT
POWER SAVE
T/S LED
T/E LED
DRUM ON
CC DOWN
H18 DET (DET)
S IN
MONO/STE DET
TOP SENS
END SENS
T REEL FG
S REEL FG
BATT SENS
DEW SENS
THERMISTER
ATF ERROR
SS GND
SS 5V
SS 5V
DRUM PG
HI-FI/WIND DET
CLOG
COMPOSITE SYNC
SP/LP DET
DRUM PG
DRUM FG
CAP FG
IN/OUT
SYNC IN (SDET)
MODE SW0
MODE SW1
MODE SW2
REC PROOF SW
MP HG
ME/MP
AF REC
CAP ON2
LOAD
UNLOAD
VA PB MODE
H18/NOR
SP/LP
SYSTEM SYNC
H CHG
FERA
FERS
JOG
DRUM BRK
DRUM ACC
VI SWP
OS ON
SEL 1
SEL 2
IC001
SERVO/ MECHANISM CONTROL
IC001 CXP80116
CAP D/A
DRUM D/A
CAP PWM
DRUM RVS
CAP FG
JC MONO/STE DET
SS 5V
SS 5V
SS 5V
SS 5V
CAP ON
CAP FWD/RVS
RP PB MODE
FE ON
JOG VO
RF SWP
A2
A7
A3
A4
A5
A11
A12
A13
R188 0
R083 10k
R084 10k
R085 10k
R086 10k
R087 10k
R088 10k
R001 100k
R002 100k
R003 100k
R004 100k
R005 100k
R006 4700
R021 10k
R120 10k
R026 0
C046 0.01 B
C178 0.01 B
C044 0.01 B
R090 10k
R089 10k
(G-18) Q002 SWITCH
(G-18) Q003 SWITCH
IC104
IC104 TC7S08F
R107 10k
R193 10k
R148 22k
R105 1000
Q002 DTA144EU
Q003 DTC144EU
R130 56k
R131 10k
C112 0.01 B
C113 1000p B
R133 10k
D101 1T32
R132 5600
C111 0.047 F
C114 1000p B
L103 470µH
R134 4700
C116 180p UJ
IC101
CHRACTOR GENERATOR CONTROL
IC101 MB673198
N.C.
HBO
VBO
BLKO
SYNC
VSS
JVBO
STUP
VOB3
VOW3
VOB2
VOW2
PDUP
XPDN
CHRI
TVRI
XVCI
VCON
VDD
XVCO
PHMO
TES1
TES2
TES3
VOB1
VOW1
OSDN
VOB1
VOW1
VDD
MASK
CGVO
CGHO
BOC1
JVB1
JOG
XV XO
PXM1
ESYI
ESYO
HSEP
VSS
EXTV
VSEP
HSEL
SG ON
SOE1
MUTE
C115 10p UJ
CT102 30p
R128 0
R125 27k
R127 10k
R124 100k
R123 33k
R121 100k
R122 100k
C110 470p B
L235 10µH
C150 33p CH
C151 33p CH
X150 5.9MHz
R151 820
R150 1M
JL300
JL464
IC150
ATF SERVO
SEL2
f0 OUT
f0 GATE
D GND
SUB GND
OSC OUT
OSC IN
A GND
NF OUT
DD GND SUB
SEL1
REC REF OUT
REC/PB SW
0 VCC
A VCC
1H SCF OUT
3/H SCF OUT
3/H IN
NF IN
VR. SCF
Vref
S/H A OUT
TSA
TSB
1/M F.D
1/26 F.D
1/4 F.D
6dB
46KHz BPF 3IH SCF
16KHz BPF 1H SCF
16KHz BPF 1H SCF
B.M
B.M
VR.SCF
V.Ref
G.C.A.
DETECTOR
S/H A
R/P
A VCC 0 VCC
C166 0.01 B
R163 22k
C167 F
C168 F
R164 22k
C152 10 16V
C153 0.1 F
C154 4.7 25V
L150 10µH
C155 1 F
R152 470
R153 470
C156 1000p B
(A-4)
IC102
CHARACTOR GENERATOR
µPD6451AGT
HOLD
H
V
TEST
N.C.
HIK
VB
VG
MP
CS
CLK
STB
DATA
N.C.
VDD
CKOX
OSCO
OSCI
VSS
R110 1k
R111 1k
R112 1k
R113 2200
L101 56µH
L102 100µH
C119 0.01 F
C106 10 16V
C105 0.01 F
C101 33p CH
CT101 30p
C103 100p SL
JL574
JL576
JL639
JL624


18
19
20
21
22
23
24
25
(See page 174.)
TO SW-168 BOARD CN702
CN004 6P
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
(See page 139.)
TO VA-64 BOARD (1/2) W650 (VIDEO(1))
W004 46P FP-240
VIDEO 5V
VIDEO 5V
VIDEO GND
VIDEO G
AU GND
AU 5V
C SYNC
VOW
VOB1
V MUTE
VI SWP
JOG
H CHG
JOG VO
MONO/STE DET
S IN
SCK
DATA TO SLV
VI S/P STB
SYSTEM RESET
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
EVER DC
-5V
HI8/NOR
PB Y RF
REC Y RF
REC C RF
PB C RF
R008 4700
R082 10k
R007 100k
A2
A7
A3
A4
A5
A11
A12
A13
R188 0
R083 10k
R084 10k
R085 10k
R086 10k
R087 10k
R088 10k
R001 100k
R002 100k
R003 100k
R004 100k
R005 100k
R006 4700
R021 10k
R120 10k
R026 0
C044 0.01 B
C178 0.01 B
JL449
JL444
JL575
JL618
JL619
JL434
JL435
JL615
Q002 SWITCH
Q003 SWITCH
IC104
IC104 TC7S08F
R107 10k
Q002 DTA144EU
Q003 DTC144EU
R193 10k
R148 22k
R105 1000
R106 4700
R041 5600
JL574
IC101
CHRACTOR GENERATOR CONTROL
IC101 MB673198
N.C.
HBO
VBO
BLKO
SYNC
Vss
JVBO
STUP
VOB3
VOW3
VOB2
VOW2
POUP
XPON
XHR1
XVR1
XVC1
VCON
VDD
XVCO
PMHO
TES1
TES2
TES3
VOB1
VOW1
OSON
VOB1
VOW1
VDD
MASK
CGVO
CGHO
BOC1
JVBI
JOG
PXNT
ESYI
ESYO
HSEP
Vss
EXTV
VSEP
HSEL
SG ON
SDET
MUTE
C112 0.01 B
C113 1000p B
R130 56k
R131 10k
R133 10k
D101 1SS352
R132 5600
C111 0.047 F
C114 1000p B
L103 470μH
R134 4700
C116 180p UJ
C115 10p UJ
CT102 30p
R128 0
R125 27k
R127 10k
R124 100k
R123 33k
R121 100k
R122 100k
C110 470p B
C118 1000p B
R108 1k
R109 1k
R184 1k
R136 0
L235 10μH
X150 5.9MHz
R150 1M
JL300
JL464
OSC IN
A GND
NF OUT
NF IN
VR. SCF
VR. SCF
V. Ref
Vref
S/H A OUT
C166 0.01 B
R163 22k
C167 F
C168 F
R164 22k
TSA
TSB
G.C.A.
Pre. AMP
SCF
B.H
(A-4)
IC102
CHARACTOR GENERATOR
IC102 MP06451AGT
HOLD
TEST
N.C.
HIK
VB
VG
VR
HP
CS
CLK
STB
DATA
N.C.
VDD
CKOX
OSCO
OSCI
Vss
JL639
JL576
R110 1k
R111 1k
R112 1k
R113 2200
L101 56μH
L102 100μH
C119 0.01 F
C106 10 16V
C105 0.01 F
C101 33p CH
CT101 30p
C103 100p SL
Q012 SWITCH
Q012 DTC144EU
R098 10k
JL357
L234 0 3216
D104 DA204U
C121 0.1 3216
C216 10 10
Q008 2SC4081
C183 10 16V
R075 33k
R076 1800
Q009 2SC4081
R074 2200
R077 22k
R078 1k
R144 47k
Q017 JOG/NORM SWITCH
Q017 FMS5
IC008
NON-VOLTAGE MEMORY
C003 0.1 F
IC008 BR93C46F
N.C.
VCC
CS
SK
N.C
GND
DO
DI
JL391
IC007 MC14028
JL424
CS
VI SP
E²PROM
PCCS
MKCS
CG
VCC
VI CS
PC SP
C041 0.1 F
JL624
R189 XX
JL350
JL599

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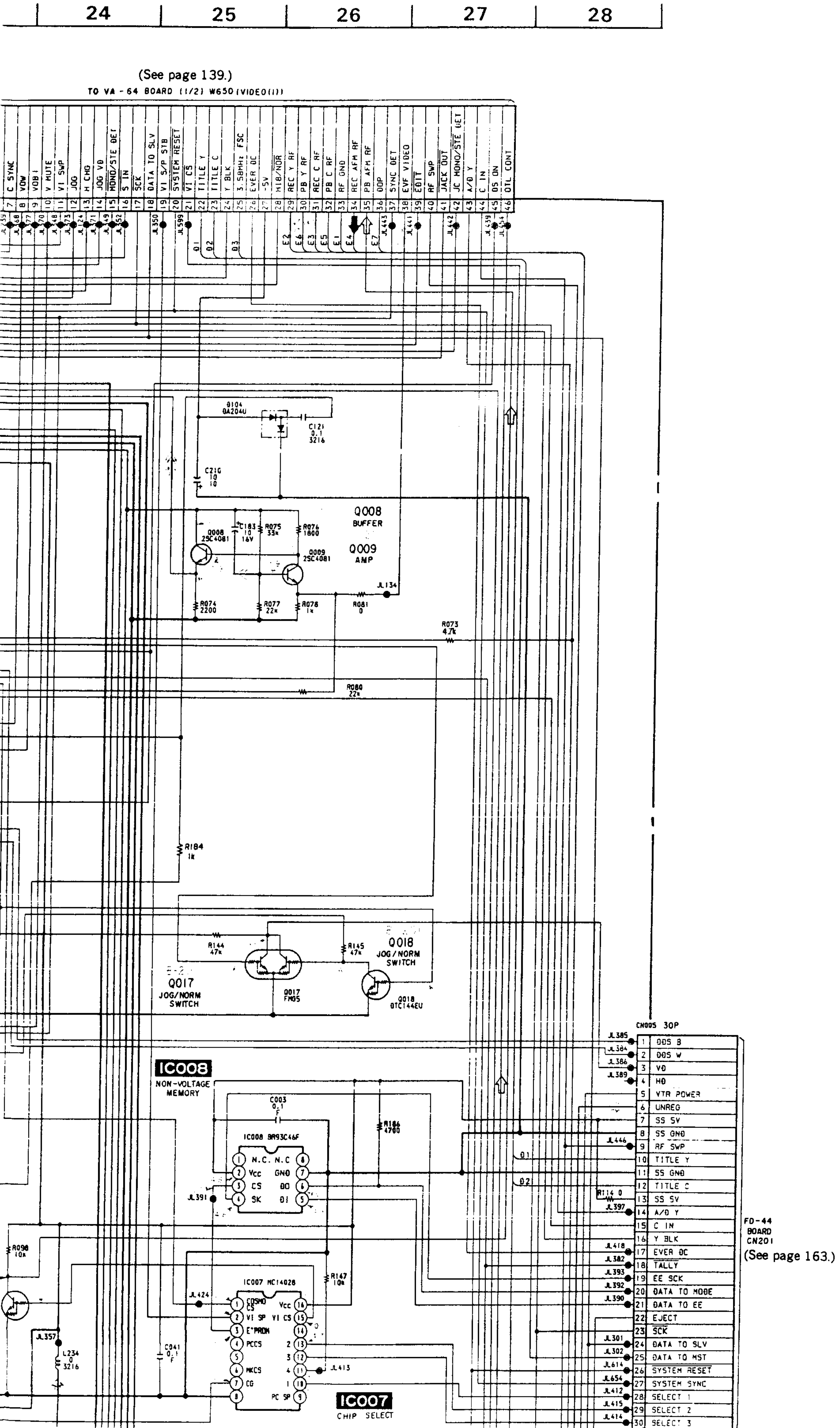
24
25
26
27
28
TO VA - 64 BOARD (1/2) W650 (VIDEO(1))
7 C SYNC
8 VDW
9 VDBI
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI S/P STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHz FSC
26 EVER DC
27 -5V
28 HI8/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
36 DDP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 RF SWP
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 DTL CONT
JL350
JL599
JL443
JL441
JL442
JL439
JL454
D1
D2
D3
E1
E2
E3
E4
E5
E6
E7
D104
DA204U
C121
0.1
3216
C216
10
10
Q008
BUFFER
Q009
AMP
C183
10
16V
R075
33k
R076
1800
Q008
2SC4081
Q009
2SC4081
JL134
R074
2200
R077
22k
R078
1k
R081
0
R073
4.7k
R080
22k
R184
1k
R144
47k
R145
47k
Q018
JOG/NORM
SWITCH
Q017
JOG/NORM
SWITCH
Q017
FMG5
Q018
DTC144EU
IC008
NON-VOLTAGE
MEMORY
C003
0.1
F
R186
4700
IC008 BR93C46F
1 N.C.
2 Vcc
3 CS
4 SK
8 N.C
7 GND
6 DO
5 DI
JL391
IC007 MC14028
JL424
1 COSMO CS
2 VI SP
3 E²PROM
4 PCCS
5
6 MKCS
7 CG
8
16 Vcc
15 VI CS
14
13 2
12 3
11 4
10 1
9 PC SP
R147
10k
JL413
C041
0.1
F
IC007
CHIP SELECT
R098
10k
JL357
L234
0
3216
CN005 30P
JL385
JL384
JL386
JL389
JL446
R114 0
JL397
JL418
JL382
JL393
JL392
JL390
JL301
JL302
JL614
JL654
JL412
JL415
JL414
1 DDS B
2 DDS W
3 VD
4 HD
5 VTR POWER
6 UNREG
7 SS 5V
8 SS GND
9 RF SWP
10 TITLE Y
11 SS GND
12 TITLE C
13 SS 5V
14 A/D Y
15 C IN
16 Y BLK
17 EVER DC
18 TALLY
19 EE SCK
20 DATA TO MODE
21 DATA TO EE
22 EJECT
23 SCK
24 DATA TO SLV
25 DATA TO MST
26 SYSTEM RESET
27 SYSTEM SYNC
28 SELECT 1
29 SELECT 2
30 SELECT 3
FD-44
BOARD
CN201

(See page 139.)

(See page 163.)

FLEXIBLEBOARD

04

04

E

F

G

H

I

J

K

• Signal path

				AUDIO Signal
REC				➡
PB				⇨

L

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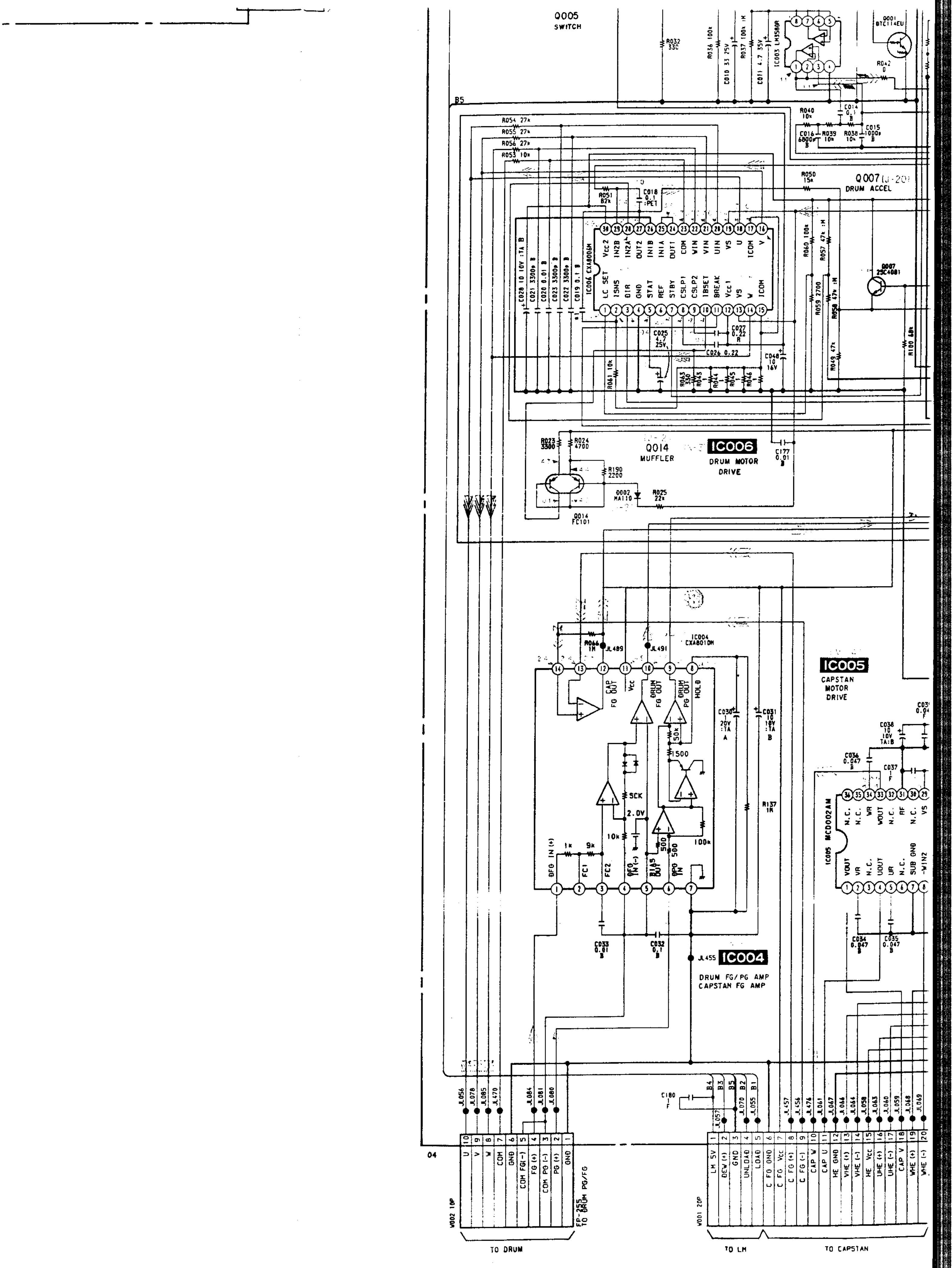
M

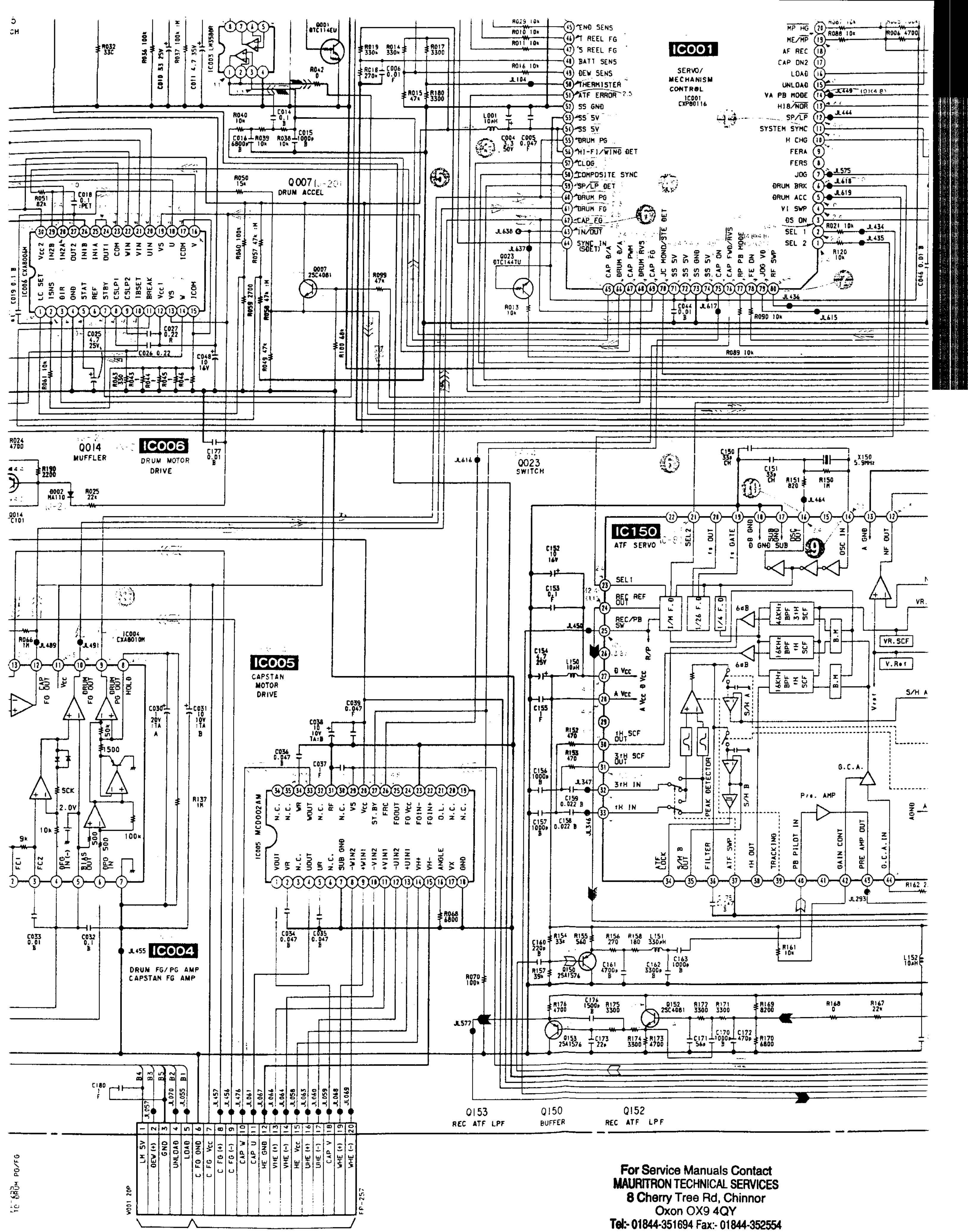
• Signal path

	REC	REC/PB	PB
Ref.signal	▶	➢	▷

N

O


Q005
SWITCH
R032 330
R036 100k
C010 33 25V
R037 100k :H
C011 4.7 35V
IC003 LM358R
Q001 BTC114EU
R042 0
B5
R040 10k
C014 0.1 B
C015 1000p B
C016 6800p B
R039 10k
R038 10k
R054 27k
R055 27k
R056 27k
R053 10k
R050 15k
Q007
DRUM ACCEL
R051 82k
C018 0.1 :PET
Vcc2
IN2B
IN2A
OUT2
IN1B
IN1A
OUT1
COM
WIN
VIN
UIN
VS
U
ICOM
V
LC SET
ISNS
DIR
GND
STAT
REF
STBY
CSLP1
CSLP2
IBSET
BREAK
Vcc1
VS
W
ICOM
IC006 CXA8006M
C028 10 10V :TA B
C021 3300p B
C020 0.01 B
C023 3300p B
C022 3300p B
C019 0.1 B
R060 100k
R057 47k :H
Q007 2SC4081
R059 2700
R058 47k :H
R049 47k
R100 68k
C025 4.7 25V
C027 0.22 R
C026 0.22
C048 10 16V
R061 10k
R063 330
R043 1
R044 1
R045 1
R046 1
R023 3300
R024 4700
Q014
MUFFLER
IC006
DRUM MOTOR DRIVE
C177 0.01 B
R190 2200
D002 MA110
R025 22k
Q014 FC101
R066 1M
JL489
JL491
IC004 CXA8010M
CAP FG OUT
Vcc
DRUM FG OUT
DRUM PG OUT
HOLD
C030 1 20V :TA A
C031 10 10V :TA B
50k
1500
5CK
2.0V
10k
100k
R137 1M
1k
9k
DFG IN (+)
FC1
FC2
DFG IN (-)
BIAS OUT
DPG IN
500
500
C033 0.01 B
C032 0.1 B
JL455
IC004
DRUM FG/PG AMP
CAPSTAN FG AMP
IC005
CAPSTAN MOTOR DRIVE
C038 10 10V TA:B
C036 0.047 B
C037 F
IC005 MCD002AM
N.C.
N.C.
VR
VOUT
N.C.
RF
N.C.
VS
VOUT
VR
UOUT
UR
SUB GND
-WIN2
C034 0.047 B
C035 0.047 B
JL056
JL078
JL085
JL470
JL084
JL081
JL080
C180 1 F
B4
B3
B5
B2
B1
JL057
JL070
JL055
JL457
JL456
JL476
JL061
JL067
JL066
JL064
JL058
JL063
JL060
JL059
JL068
JL069
04
U
V
W
COM
GND
COM FG(-)
FG (+)
COM PG (-)
PG (+)
GND
W002 10P
FP-255 TO DRUM PG/FG
TO DRUM
LM 5V
DEW (+)
GND
UNLOAD
LOAD
C FG GND
C FG Vcc
C FG (+)
C FG (-)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
W001 20P
TO LM
TO CAPSTAN


IC001
SERVO/ MECHANISM CONTROL
IC001 CXP80116
END SENS
T REEL FG
S REEL FG
BATT SENS
DEW SENS
THERMISTER
ATF ERROR
SS GND
SS 5V
DRUM PG
HI-FI/WIND DET
CLOG
COMPOSITE SYNC
SP/LP DET
DRUM PG
DRUM FG
CAP FG
IN/OUT
SYNC IN (SDET)
MP HG
ME/MP
AF REC
CAP ON2
LOAD
UNLOAD
VA PB MODE
H18/NOR
SP/LP
SYSTEM SYNC
H CHG
FERA
FERS
JOG
DRUM BRK
DRUM ACC
VI SWP
DS ON
SEL 1
SEL 2
CAP D/A
DRUM D/A
CAP PWM
DRUM RVS
CAP FG
JC MONO/STE DET
SS 5V
SS 5V
SS GND
SS 5V
CAP ON
CAP FWD/RVS
RP PB MODE
FE ON
JOG VD
RF SWP
Q001 DTC114EU
IC003 LM358M
Q007 DRUM ACCEL
Q007 2SC4081
Q023 DTC144TU
IC006 CXA8006M
Q014 MUFFLER
IC006 DRUM MOTOR DRIVE
Q023 SWITCH
D002 MA110
X150 5.9MHz
IC150
ATF SERVO
SEL1
REC REF
REC/PB SW
R/P
θ Vcc
A Vcc
1H SCF OUT
3H SCF OUT
3H IN
1H IN
SEL 2
fs OUT
fs GATE
θ GND
θ GND SUB
SUB GND
OSC OUT
OSC IN
A GND
NF OUT
1/M F.D
1/26 F.D
1/4 F.D
6dB
46KHz BPF
3H SCF
16KHz BPF
1H SCF
B.M
VR.SCF
V.Ref
S/H A
S/H B
PEAK DETECTOR
G.C.A.
Pre. AMP
ATF LOCK
S/H B OUT
FILTER
ATF SWP
1H OUT
TRACKING
PB PILOT IN
GAIN CONT
PRE AMP OUT
G.C.A. IN
AGND
IC004 CXA8010M
CAP FG OUT
Vcc
DRUM FG OUT
DRUM PG OUT
HOLD
FC1
FC2
DFG IN(-)
BIAS OUT
DPG IN
IC004
DRUM FG/PG AMP
CAPSTAN FG AMP
IC005
CAPSTAN MOTOR DRIVE
IC005 MCD002AM
Q150 2SA1576
Q152 2SC4081
Q153 2SA1576
Q153 REC ATF LPF
Q150 BUFFER
Q152 REC ATF LPF
LM 5V
DEW (+)
GND
UNLOAD
LOAD
C FG GND
C FG Vcc
C FG (+)
C FG (-)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
W001 20P
FP-257
TO LM
TO CAPSTAN
TO DRUM PG/FG

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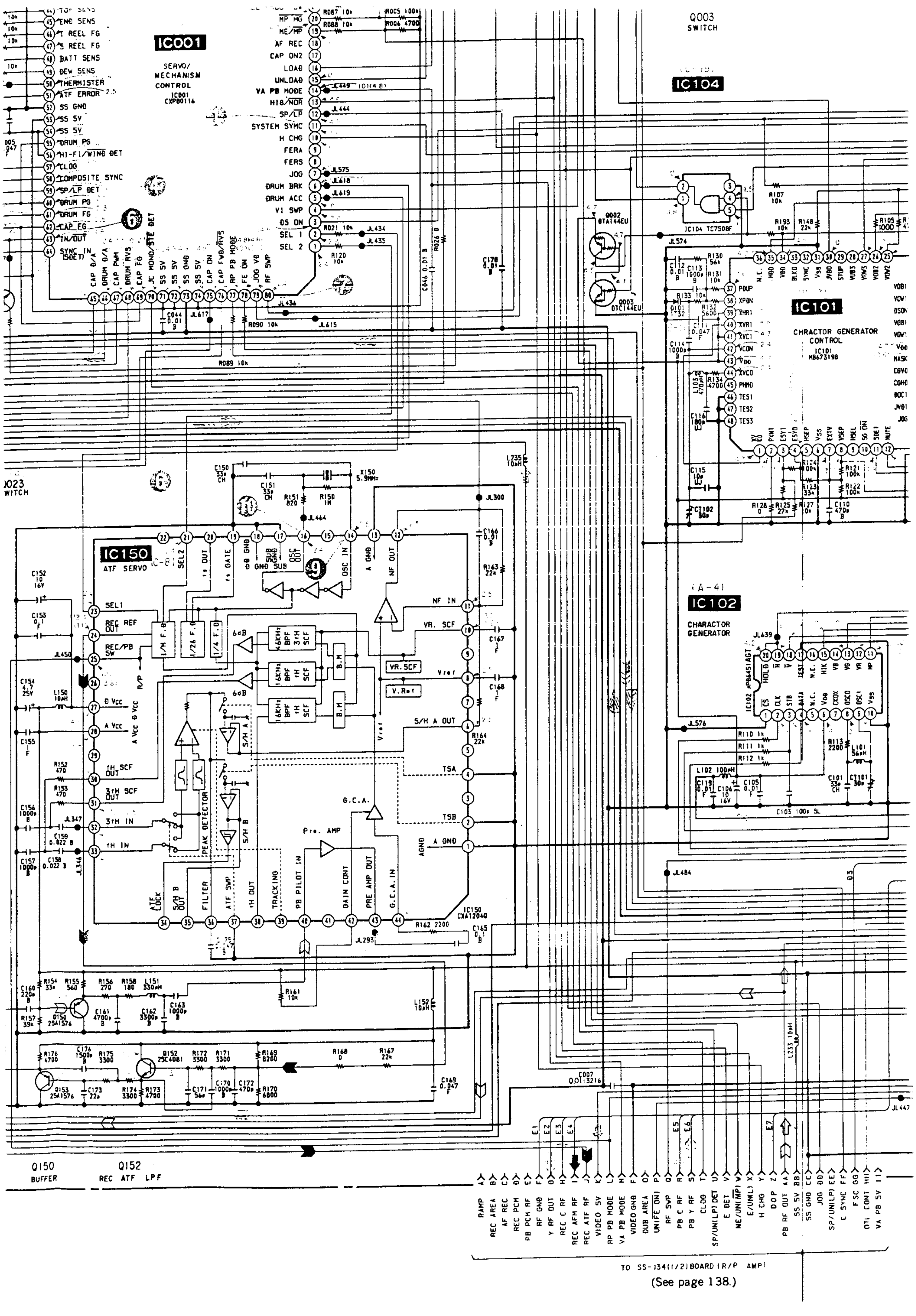
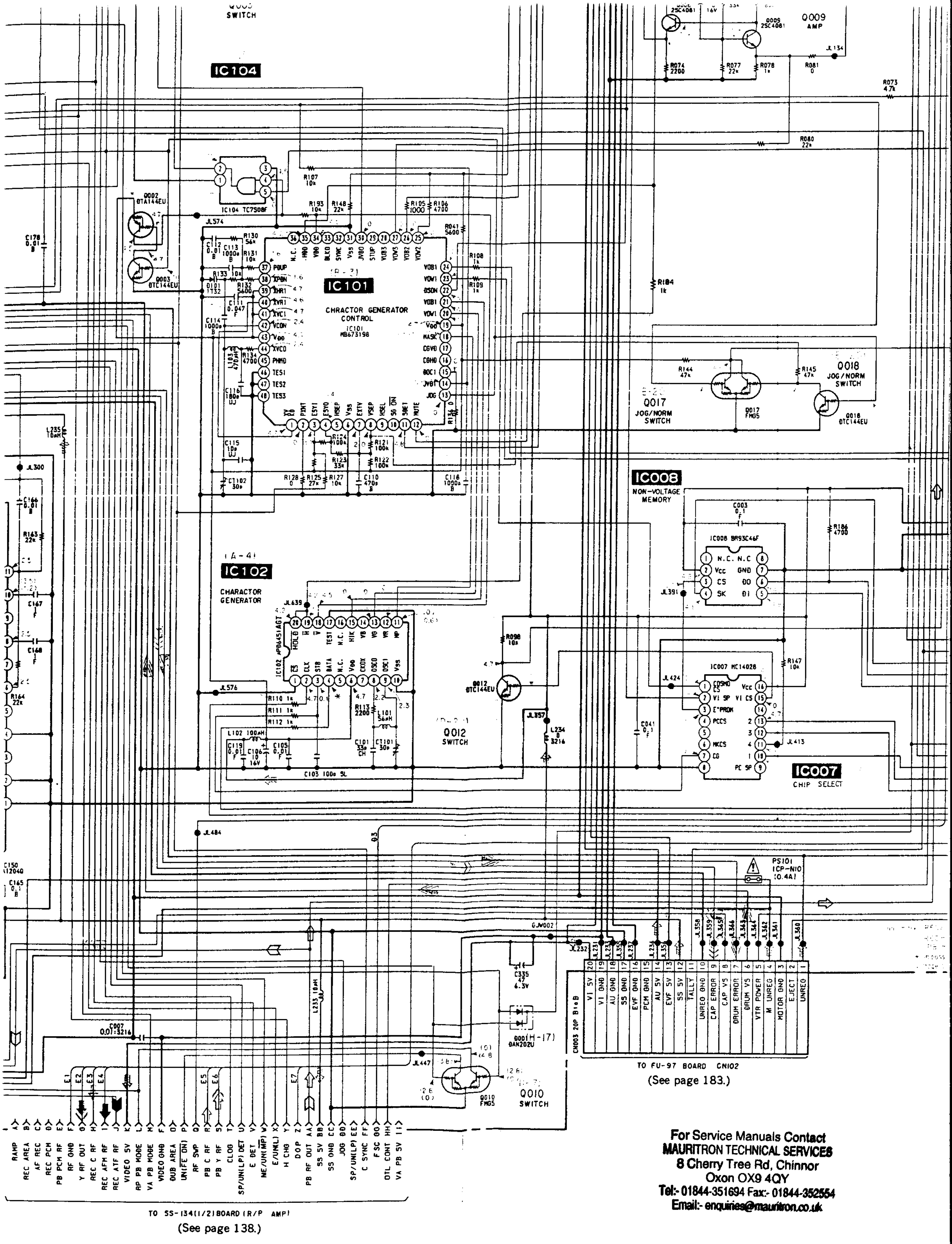

IC001
SERVO/ MECHANISM CONTROL
IC001 CXP80116
45 END SENS
46 T REEL FG
47 S REEL FG
48 BATT SENS
49 DEW SENS
50 THERMISTER
51 ATF ERROR
52 SS GND
53 SS 5V
54 SS 5V
55 DRUM PG
56 HI-FI/WIND DET
57 CLOG
58 COMPOSITE SYNC
59 SP/LP DET
60 DRUM PG
61 DRUM FG
62 CAP FG
63 IN/OUT
64 SYNC IN (SDET)
65 CAP D/A
66 DRUM D/A
67 CAP PWM
68 DRUM RVS
69 CAP FG
70 JC MONO/STE DET
71 SS 5V
72 SS 5V
73 SS GND
74 SS 5V
75 CAP ON
76 CAP FWD/RVS
77 RP PB MODE
78 FE ON
79 JOG VD
80 RF SWP
20 MP HG
19 ME/MP
18 AF REC
17 CAP ON2
16 LOAD
15 UNLOAD
14 VA PB MODE
13 HI8/NOR
12 SP/LP
11 SYSTEM SYNC
10 H CHG
9 FERA
8 FERS
7 JOG
6 DRUM BRK
5 DRUM ACC
4 V1 SWP
3 DS ON
2 SEL 1
1 SEL 2
R087 10k
R088 10k
R005 100k
R006 4700
JL449
JL444
JL575
JL618
JL619
R021 10k
JL434
JL435
R120 10k
R026 0
C046 0.01 B
C178 0.01 B
C044 0.01 B
JL617
JL436
R090 10k
JL615
R089 10k
Q003 SWITCH
IC104
IC104 TC7508F
Q002 DTA144EU
Q003 DTC144EU
R107 10k
R193 10k
R148 22k
R105 1000
JL574
C112 0.01 B
C113 1000p B
R130 56k
R131 10k
R133 10k
D101 1T32
R132 5600
C111 0.047 F
C114 1000p B
L103 470μH
R134 4700
C116 180p UJ
C115 10p
CT102 30p
R128 0
R125 27k
R127 10k
C110 470p B
R124 100k
R123 33k
R121 100k
R122 100k
IC101
CHRACTOR GENERATOR CONTROL
IC101 MB673198
36 N.C.
35 HBD
34 VBD
33 BLKO
32 SYNC
31 VSS
30 VBD
29 STOP
28 VOB3
27 VOW3
26 VOB2
25 VOW2
37 PDUP
38 XPON
39 XHR1
40 XYR1
41 XVC1
42 VCON
43 VDD
44 XVCO
45 PHHD
46 TES1
47 TES2
48 TES3
1 XCS
2 PXNT
3 ESYI
4 ESYO
5 HSEP
6 VSS
7 EXTV
8 VSEP
9 HSEL
10 SDE1
11
12 MUTE
VOB1
VOW1
OSON
VOB1
VOW1
VDD
MASK
CBVO
CGHO
BOC1
JVD1
JOG
L235 10μH
JL300
JL464
C150 33p CH
C151 33p CH
X150 5.9MHz
R151 820
R150 1M
C166 0.01 B
R163 22k
IC150
ATF SERVO
(C-8)
22 SEL2
21 fH OUT
20
19 fH GATE
18 ΦB GND
17 GND SUB
16 OSC OUT
15
14 OSC IN
13 A GND
12 NF OUT
23 SEL1
24 REC REF OUT
25 REC/PB SW
26
27 D Vcc
28 A Vcc
29
30 1H SCF OUT
31 3fH SCF OUT
32 3fH IN
33 fH IN
11 NF IN
10 VR. SCF
9
8 Vref
7
6 S/H A OUT
5
4 TSA
3
2 TSB
1 A GND
34 ATF LOCK
35 S/H B OUT
36 FILTER
37 ATF SWP
38 fH OUT
39 TRACKING
40 PB PILOT IN
41
42 GAIN CONT
43 PRE AMP OUT
44 G.C.A. IN
1/M F.D
1/26 F.D
1/4 F.D
46KHz BPF 3fH SCF
16KHz BPF fH SCF
16KHz BPF fH SCF
B.M
B.M
6dB
6dB
VR.SCF
V.Ref
S/H A
S/H B
PEAK DETECTOR
G.C.A.
Pre. AMP
R/P
D Vcc
A Vcc
AGND
Vref
IC150 CXA1204Q
C167 F
C168 F
R164 22k
R162 2200
C165 0.1 B
JL293
C152 10 16V
C153 0.1 F
JL450
C154 4.7 25V
L150 10μH
C155 F
R152 470
R153 470
C156 1000p B
JL347
C159 0.022 B
C157 1000p B
C158 0.022 B
JL346
(A-4)
IC102
CHARACTOR GENERATOR
JL639
20 HOLD
19 H
18 V
17 TEST
16 N.C.
15 HIX
14 VB
13 VG
12 VR
11 MP
1 CS
2 CLK
3 STB
4 DATA
5 N.C.
6 VDD
7 CKOX
8 OSC1
9 OSCI
10 VSS
IC102 μPD6451AGT
JL576
R110 1k
R111 1k
R112 1k
R113 2200
L101 56μH
L102 100μH
C119 0.01 B
C106 10 16V
C105 0.01 F
C101 33p CH
CT101 30p
C103 100p SL
JL484
Q3
0023 SWITCH
C160 220p B
R154 33k
R155 560
R156 270
R158 180
L151 330μH
C163 1000p B
R157 39k
Q150 2SA1576
C161 4700p B
C162 3300p B
R161 10k
L152 10μH
L233 10μH
R176 4700
C176 1500p B
R175 3300
Q152 2SC4081
R172 3300
R171 3300
R169 8200
R168 0
R167 22k
Q153 2SA1576
C173 22p
R174 3300
R173 4700
C171 56p
C170 1000p B
C172 470p B
R170 6800
C169 0.047 F
C007 0.01:3216
JL447
E1
E2
E3
E4
E5
E6
E7
Q150 BUFFER
Q152 REC ATF LPF
A RAMP
B REC AREA
C AF REC
D REC PCM
E PB PCM RF
F RF GND
G Y RF OUT
H REC C RF
I REC AFM RF
J REC ATF RF
K VIDEO 5V
L RP PB MODE
M VIDEO PB MODE
N VIDEO GND
O DUB AREA
P UN(FE ON)
Q RF SWP
R PB C RF
S PB Y RF
T CLOG
U SP/UN(LP) DET
V E DET
W ME/UN(MP)
X E/UN(L)
Y H CHG
Z DOP
AA PB RF OUT
BB SS 5V
CC SS GND
DD JOG
EE SP/UN(LP)
FF C SYNC
GG FSC
HH DTL CONT
II VA PB 5V
TO SS-134(1/2) BOARD (R/P AMP)
(See page 138.)

SERVO, SYSTEM CONTRO


Q005 SWITCH
IC104
IC104 TC7S08F
Q002 DTA144EU
Q003 DTC144EU
IC101
CHRACTOR GENERATOR CONTROL
IC101 MB673198
IC102
CHARACTOR GENERATOR
IC102 μPD6451AGT
Q009 2SC4081
Q009 AMP
Q017 JOG/NORM SWITCH
Q017 FMG5
Q018 JOG/NORM SWITCH
Q018 DTC144EU
IC008
NON-VOLTAGE MEMORY
IC008 BR93C46F
IC007 MC14028
IC007
CHIP SELECT
Q012 DTC144EU
Q012 SWITCH
PS101 ICP-N10 (0.4A)
CN003 20P B to B
V1 5V
V1 GND
AU GND
SS GND
EVF GND
PCM GND
AU 5V
EVF 5V
SS 5V
TALLY
UNREG GND
CAP ERROR
CAP VS
DRUM ERROR
DRUM VS
VTR POWER
M UNREG
MOTOR GND
EJECT
UNREG
TO FU-97 BOARD CN102
(See page 183.)
D001 DAN202U
Q010 FMG5
Q010 SWITCH
RAMP
REC AREA
AF REC
REC PCM
PB PCM RF
RF GND
Y RF OUT
REC C RF
REC AFM RF
REC ATF RF
VIDEO 5V
RP PB MODE
VA PB MODE
VIDEO GND
DUB AREA
UN(FE ON)
RF SWP
PB C RF
PB Y RF
CLOG
SP/UN(LP) DET
E DET
ME/UN(MP)
E/UN(L)
H CHG
DOP
PB RF OUT
SS 5V
SS GND
JOG
SP/UN(LP) EE
C SYNC
FSC
DTL CONT
VA PB 5V
TO SS-134(1/2) BOARD (R/P AMP)
(See page 138.)

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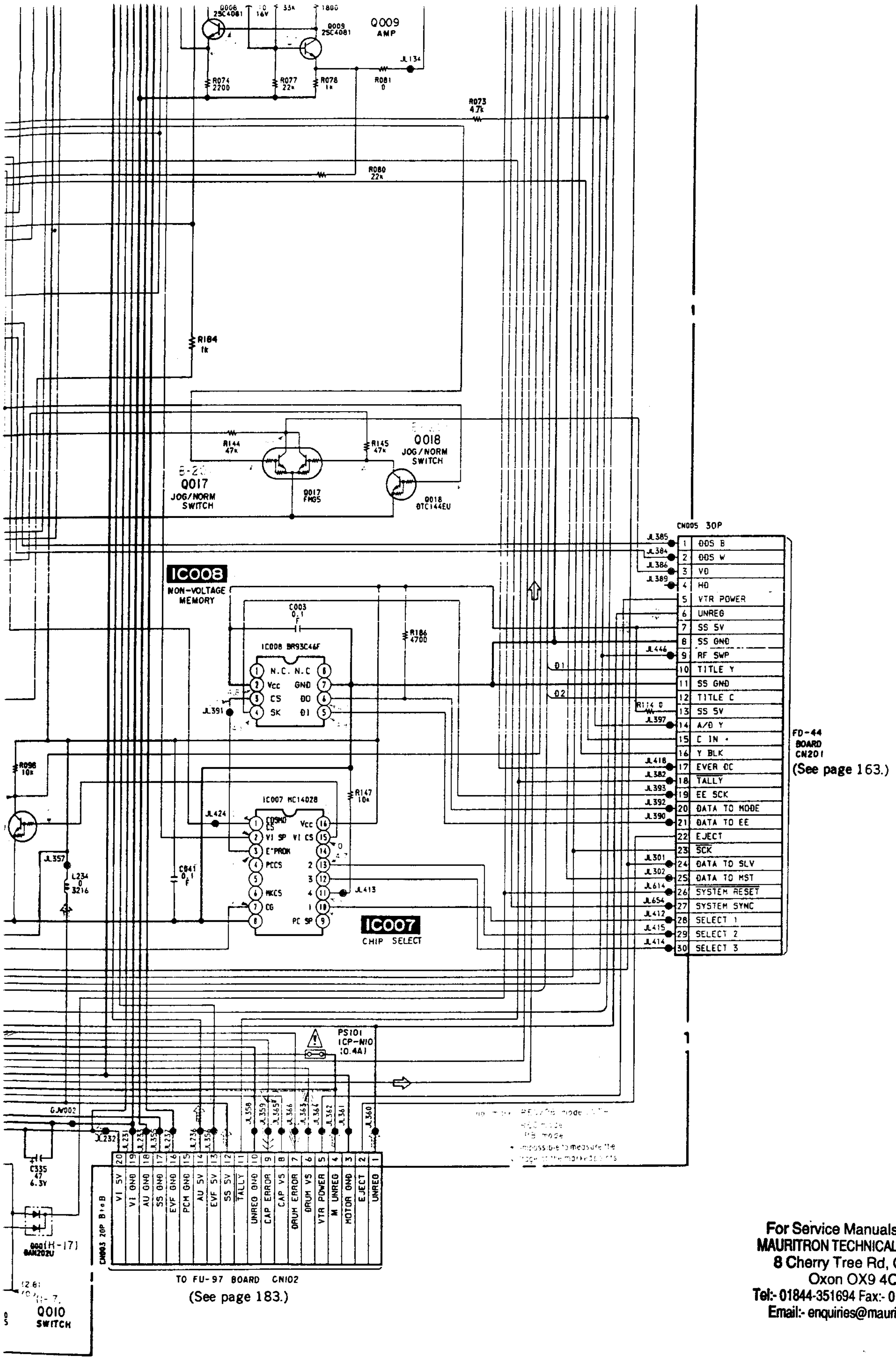
Q006 2SC4081
Q009 2SC4081
Q009 AMP
R074 2200
R077 22k
R078 1k
R081 0
JL134
R073 4.7k
R080 22k
R184 1k
R144 47k
R145 47k
Q018 JOG/NORM SWITCH
Q017 JOG/NORM SWITCH
Q017 FMG5
Q018 DTC144EU
IC008
NON-VOLTAGE MEMORY
C003 0.1 F
R186 4700
IC008 BR93C46F
N.C.
Vcc
CS
SK
GND
DO
DI
JL391
R096 10k
R147 10k
IC007 MC14028
IC007
CHIP SELECT
JL424
JL413
C841 0.1 F
JL357
L234 0 3216
CN005 30P
JL385
JL384
JL386
JL389
JL446
R114 0
JL397
JL418
JL382
JL393
JL392
JL390
JL301
JL302
JL614
JL654
JL412
JL415
JL414
1 DDS B
2 DDS W
3 VD
4 HD
5 VTR POWER
6 UNREG
7 SS 5V
8 SS GND
9 RF SWP
10 TITLE Y
11 SS GND
12 TITLE C
13 SS 5V
14 A/D Y
15 C IN
16 Y BLK
17 EVER DC
18 TALLY
19 EE SCK
20 DATA TO MODE
21 DATA TO EE
22 EJECT
23 SCK
24 DATA TO SLV
25 DATA TO MST
26 SYSTEM RESET
27 SYSTEM SYNC
28 SELECT 1
29 SELECT 2
30 SELECT 3
D1
D2
FD-44 BOARD CN201
(See page 163.)
PS101 ICP-N10 (0.4A)
GJW002
JL232
JL231
JL233
JL355
JL237
JL236
JL354
JL356
JL358
JL359
JL365
JL366
JL363
JL364
JL362
JL361
JL360
C335 47 6.3V
D001 (H-17) DAN202U
Q010 SWITCH
CN003 20P B to B
20 VI 5V
19 VI GND
18 AU GND
17 SS GND
16 EVF GND
15 PCM GND
14 AU 5V
13 EVF 5V
12 SS 5V
11 TALLY
10 UNREG GND
9 CAP ERROR
8 CAP VS
7 DRUM ERROR
6 DRUM VS
5 VTR POWER
4 M UNREG
3 MOTOR GND
2 EJECT
1 UNREG
TO FU-97 BOARD CN102
(See page 183.)
REC mode
PB mode
impossible to measure the

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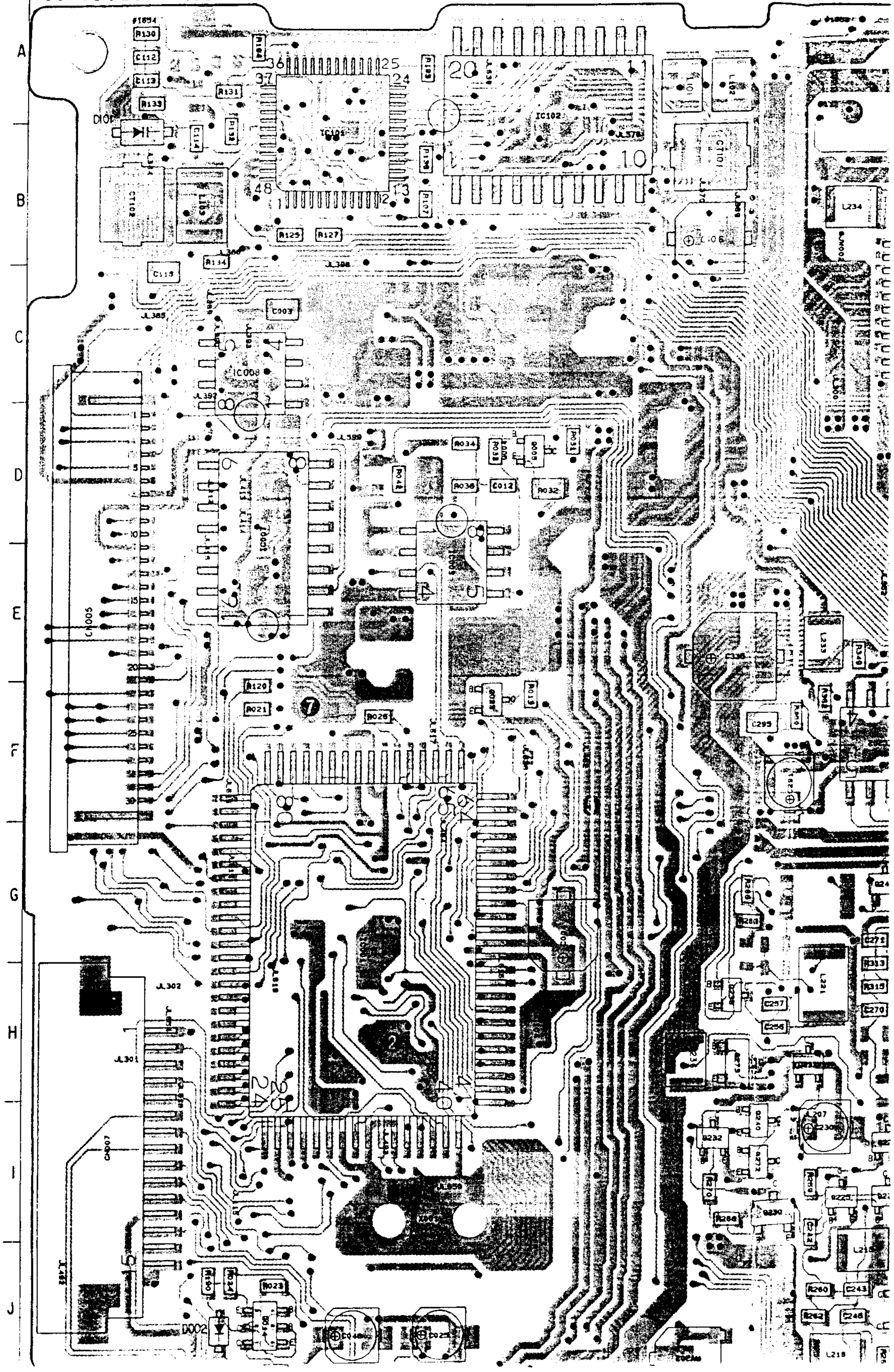
SS-134 (R/P AMP, SERVO, SYSTEM CONTROL), CC-60 (RELAY), FP-89 (MODE SWITCH, SENSC

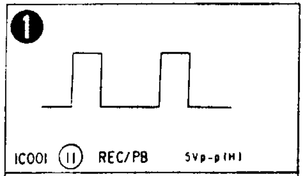
—Ref. No. SS-134, CC-60 BOARDS : 2000 series, FP-89, FP-90 BOARDS : 5000 series—

SS-134 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
R130
C112
C113
R133
D101
C114
CT102
L103
R131
IC101
36
37
25
24
48
13
12
R125
R127
R134
C115
IC102
20
11
10
L101
L102
CT101
L234
C106
C003
IC008
CN005
IC003
IC005
R034
R036
C012
R032
R120
R021
R026
C295
L233
C336
IC001
2
CN007
JL302
JL301
L221
L219
C257
C256
R232
C230
R260
C243
C248
R262
L218
D002
R023
R230
R286
R280
R313
R315
C270
C272

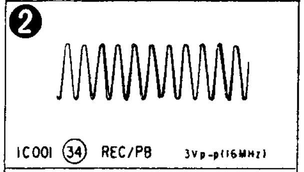
SS-134 BOARD
(SERVO, SYSTEM CONTROL)

❶



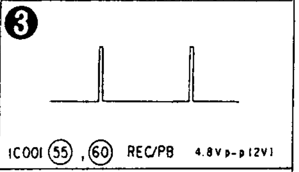
IC001 ⑪ REC/PB 5Vp-p(H)

❷



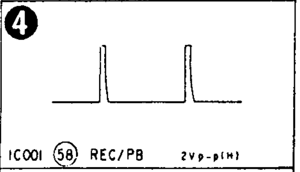
IC001 ㉞ REC/PB 3Vp-p(16MHz)

❸



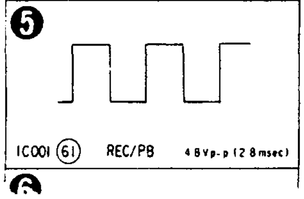
IC001 (55), (60) REC/PB 4.8Vp-p(2V)

❹



IC001 (58) REC/PB 2Vp-p(H)

❺



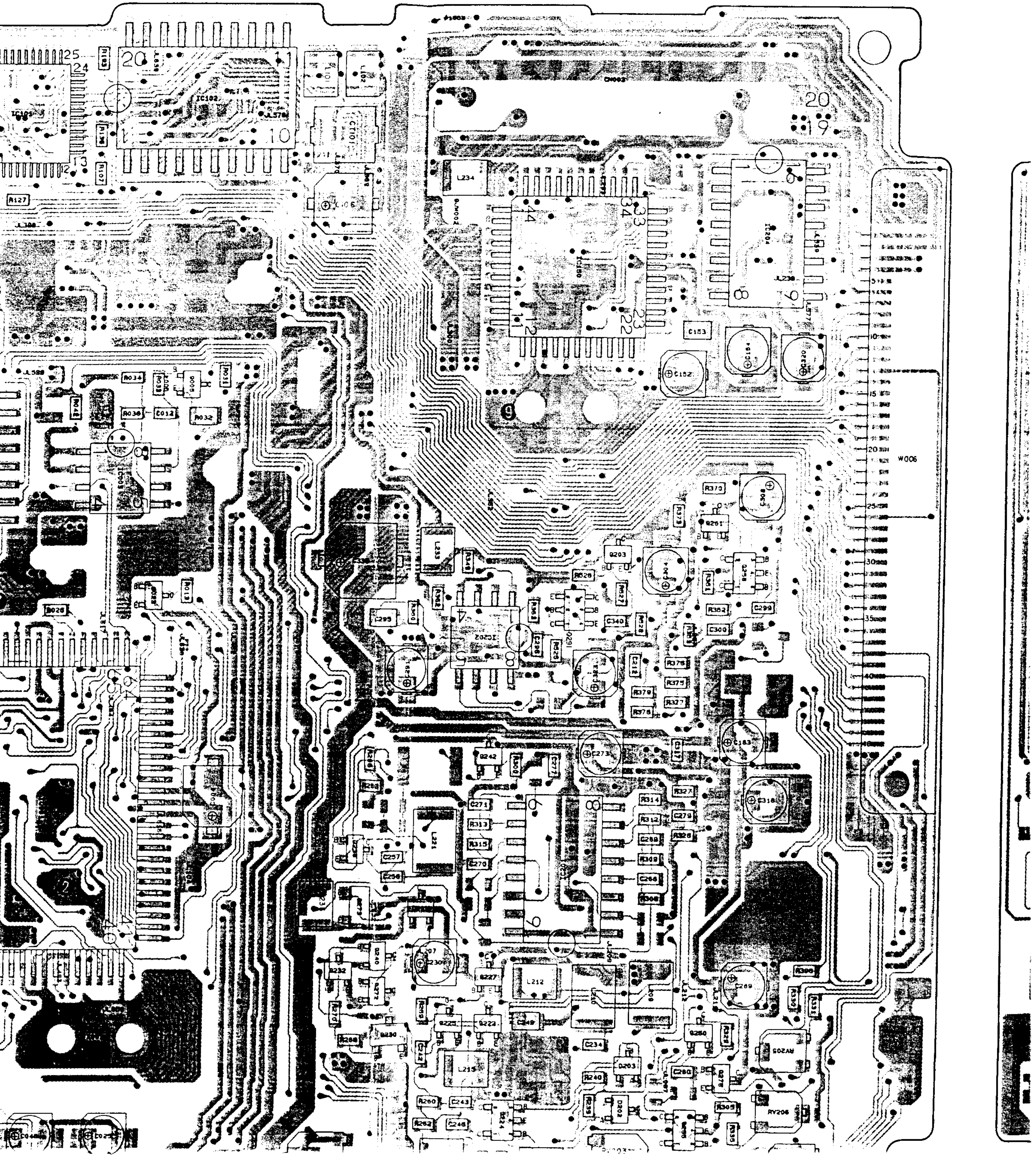
IC001 (61) REC/PB 4.8Vp-p(2.8msec)

❻

YSTEM CONTROL), CC-60 (RELAY), FP-89 (MODE SWITCH, SENSOR), FP-90 (TAPE SELECT SWITCH, SENSOR) PRINTED WIRING BOARDS

S : 2000 series, FP-89, FP-90 BOARDS : 5000 series—

SIDE)



IC102
CT101
L234
L235
L212
L215
L221
IC202
C152
C153
C183
C269
C273
C316
R370
R371
Q203
Q242
Q251
Q280
D202
D203
RV205
RV206
W006

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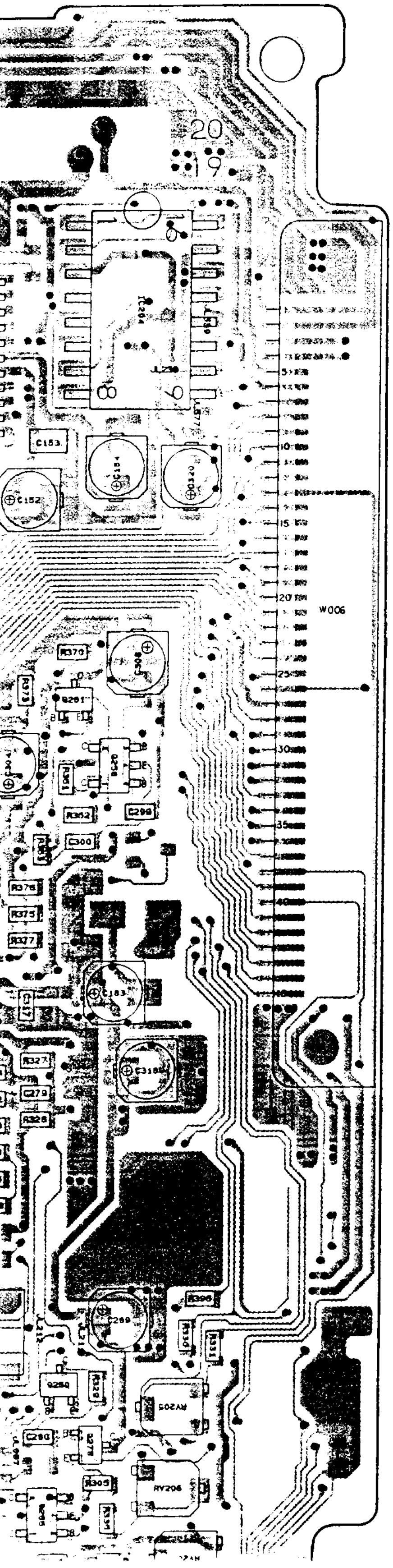
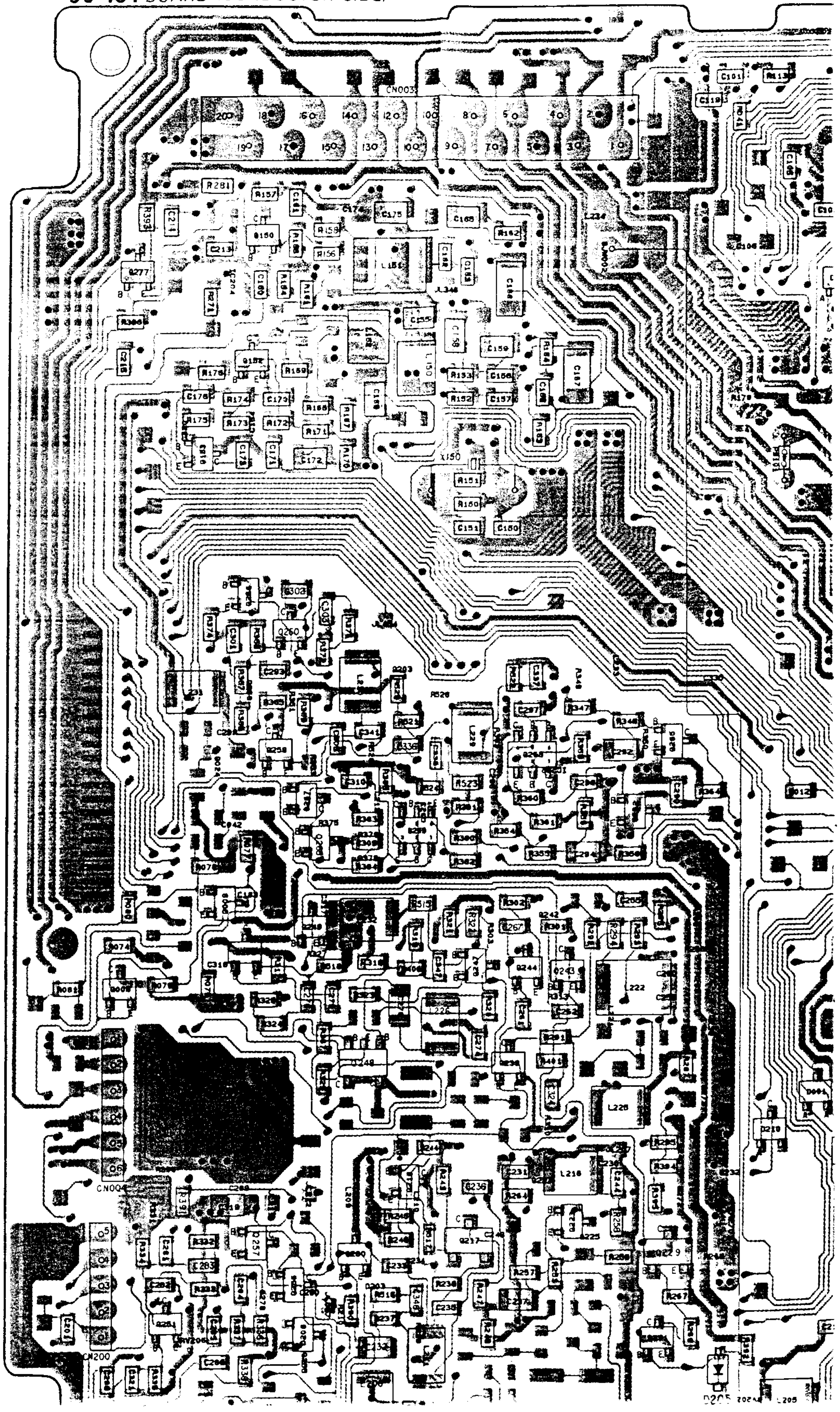
Email:- enquiries@mauritron.co.uk

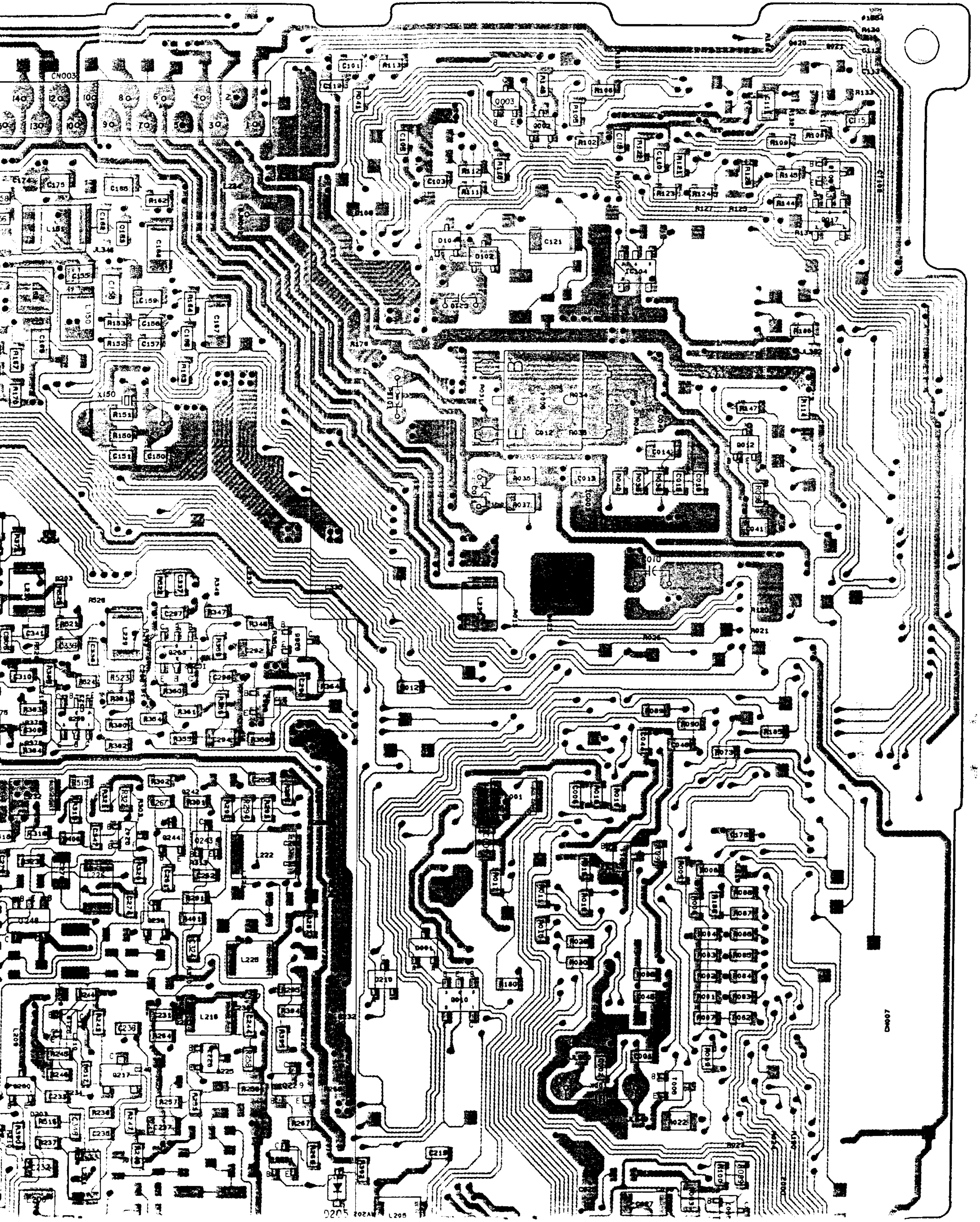
ECT SWITCH, SENSOR) PRINTED WIRING BOARDS



SS-134 BOARD (CONDUCTOR SIDE)



R SIDE)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C119
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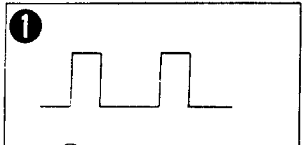
Q002
R106
R102
C103
R112
R111
R109
R108
R145
R144
R123
R124
R127
R125
Q117
C115
R133
C113
R130
C121
D101
D102
IC104
R114
R147
Q012
C012
R034
R035
R037
C013
C014
R041
Q010
R026
R021
R180
C175
C185
R162
L185
C155
C159
L150
R153
R132
C157
X150
R151
R150
C151
C150
Q001
R089
R090
C048
R073
C178
R088
R087
R086
R085
R084
R083
R082
R081
D001
R022
C297
R347
R348
R523
R360
R361
R355
L222
L226
L228
L218
Q244
Q243
Q242
R267
C208
C236
R264
Q217
R257
R236
C238
R237
C218
D205
L205
CN007

SS-134 BOARD
(SERVO, SYSTEM CONTROL)

❶

IC001 ⑪ REC/PB 5Vp-p(H)

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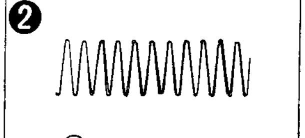
IC001 ㉞ REC/PB 3Vp-p(16MHz)

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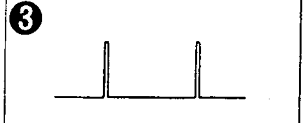
IC001 (55), (60) REC/PB 4.8Vp-p(2V)

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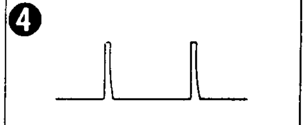
IC001 (58) REC/PB 2Vp-p(H)

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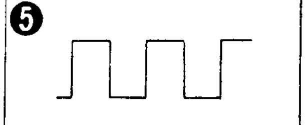
IC001 (61) REC/PB 4.8Vp-p(2.8msec)

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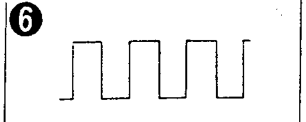
IC001 (62), (69) REC/PB 4.8Vp-p(1.05msec)

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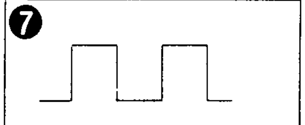
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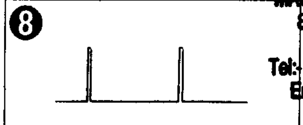
IC004 ⑨ REC/PB 4.8Vp-p(2V)

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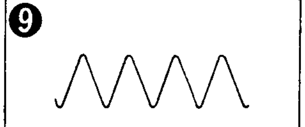
IC150 ⑭ REC/PB 3.2Vp-p(5.95MHz)

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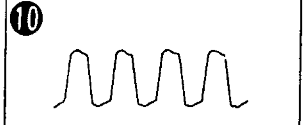
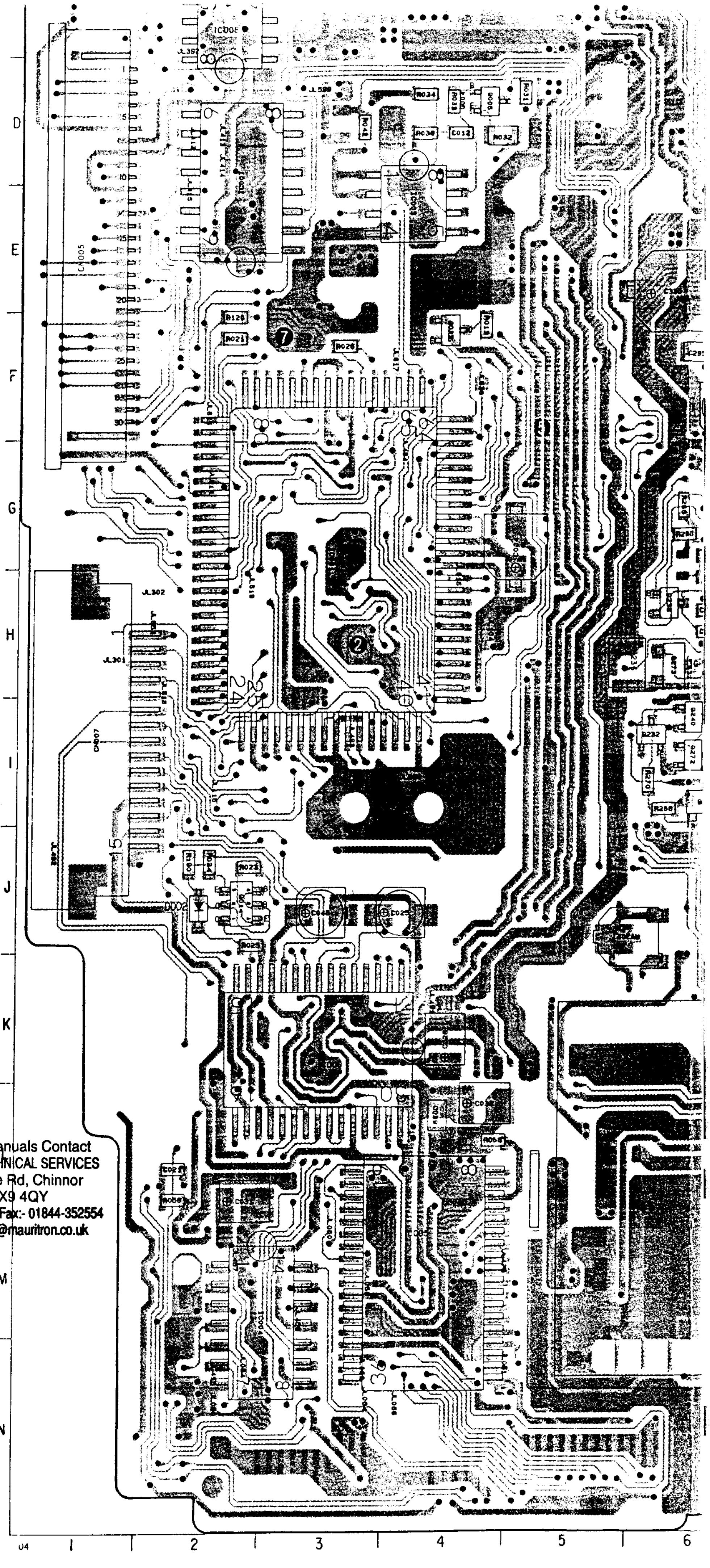

IC150 ⑯ REC/PB 4.2Vp-p(5.95MHz)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E
F
G
H
I
J
K
M
N
1
2
3
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5
6
IC006
CN005
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R120
R021
R026
R034
R036
C012
R032
R019
JL301
JL302
D002
R023
R025
R232
R288

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
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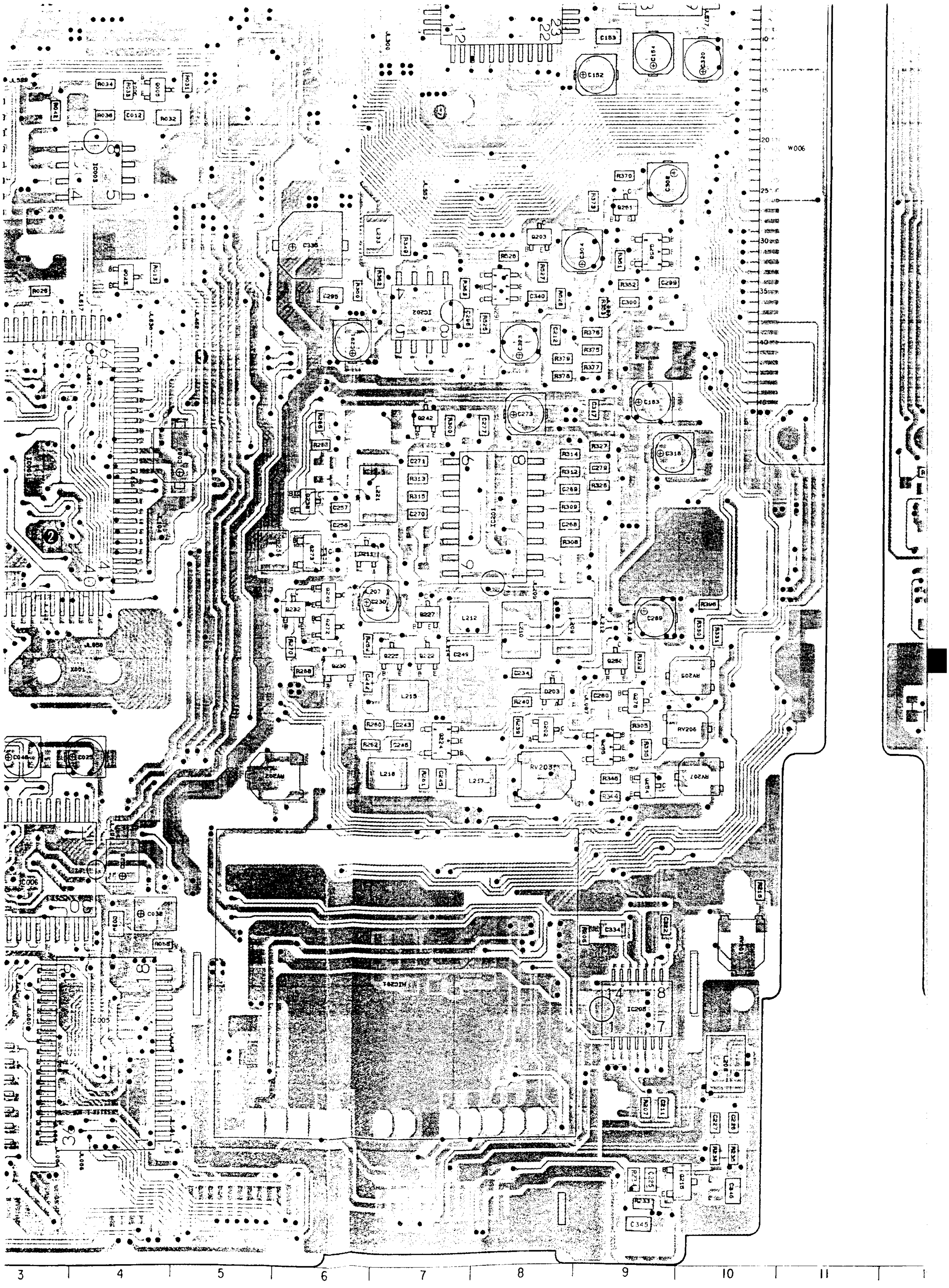
Email:- enquiries@mauritron.co.uk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C320
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C308
C336
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C318
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C230
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RV203
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L212
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Q205
Q215
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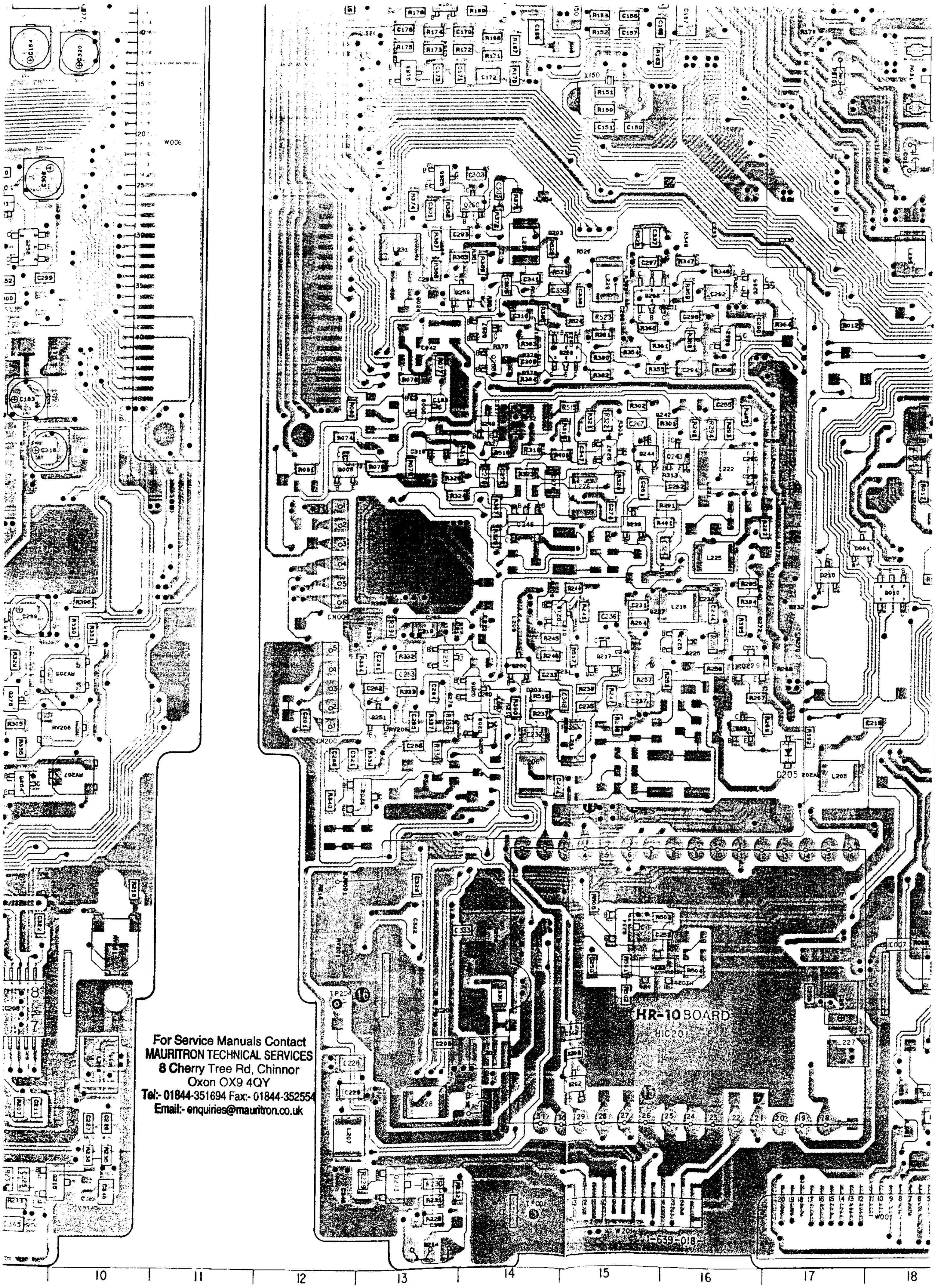
HR-10 BOARD
HIC201
W006
CN004
CN200
W201
W001
TP001
TP224
D205
L208
L222
L225
L227
X150
1-639-018
10
11
12
13
14
15
16
17
18

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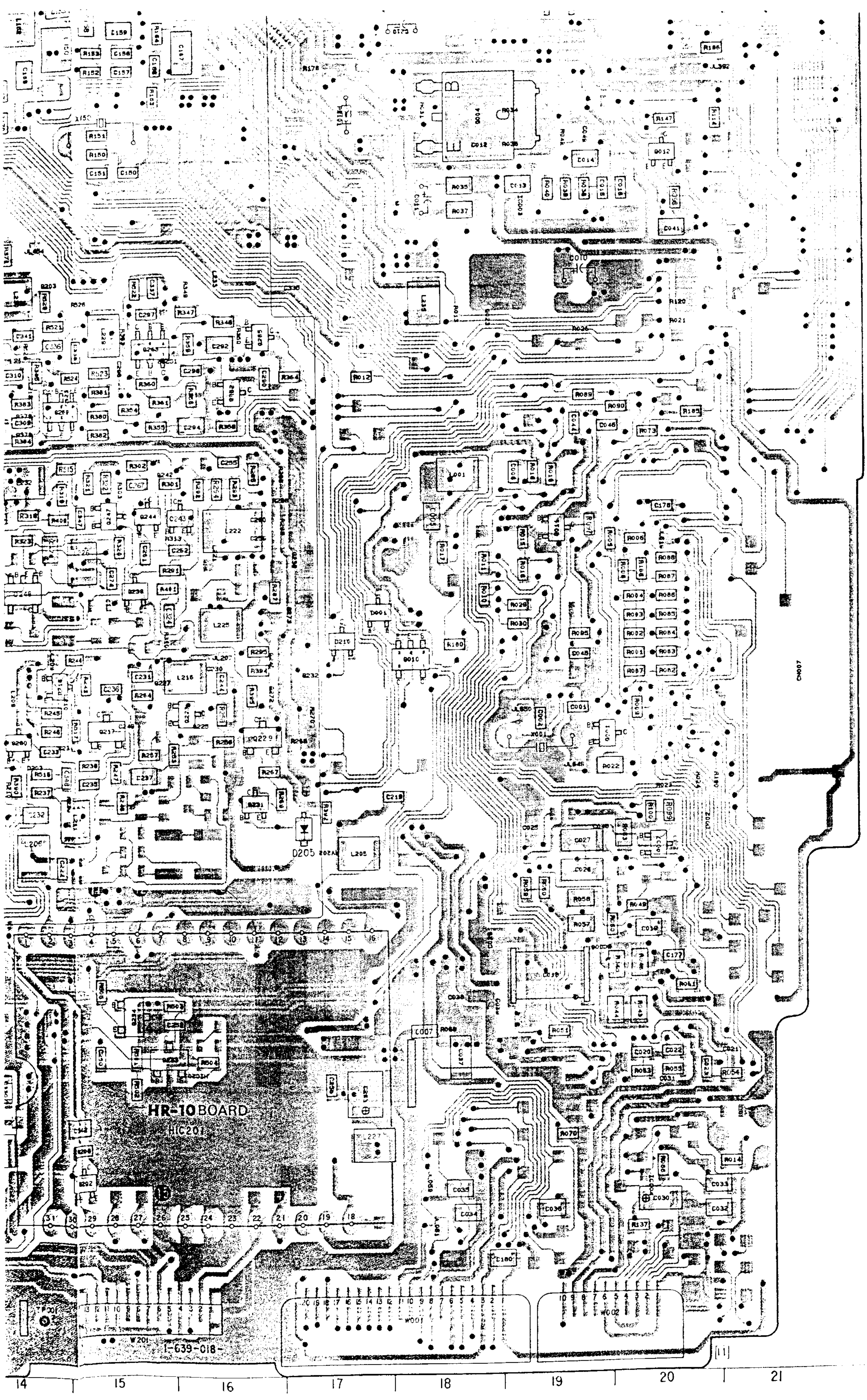
HR-10 BOARD
HIC201
1-639-018-
CN007
W001
W002
W201
14
15
16
17
18
19
20
21

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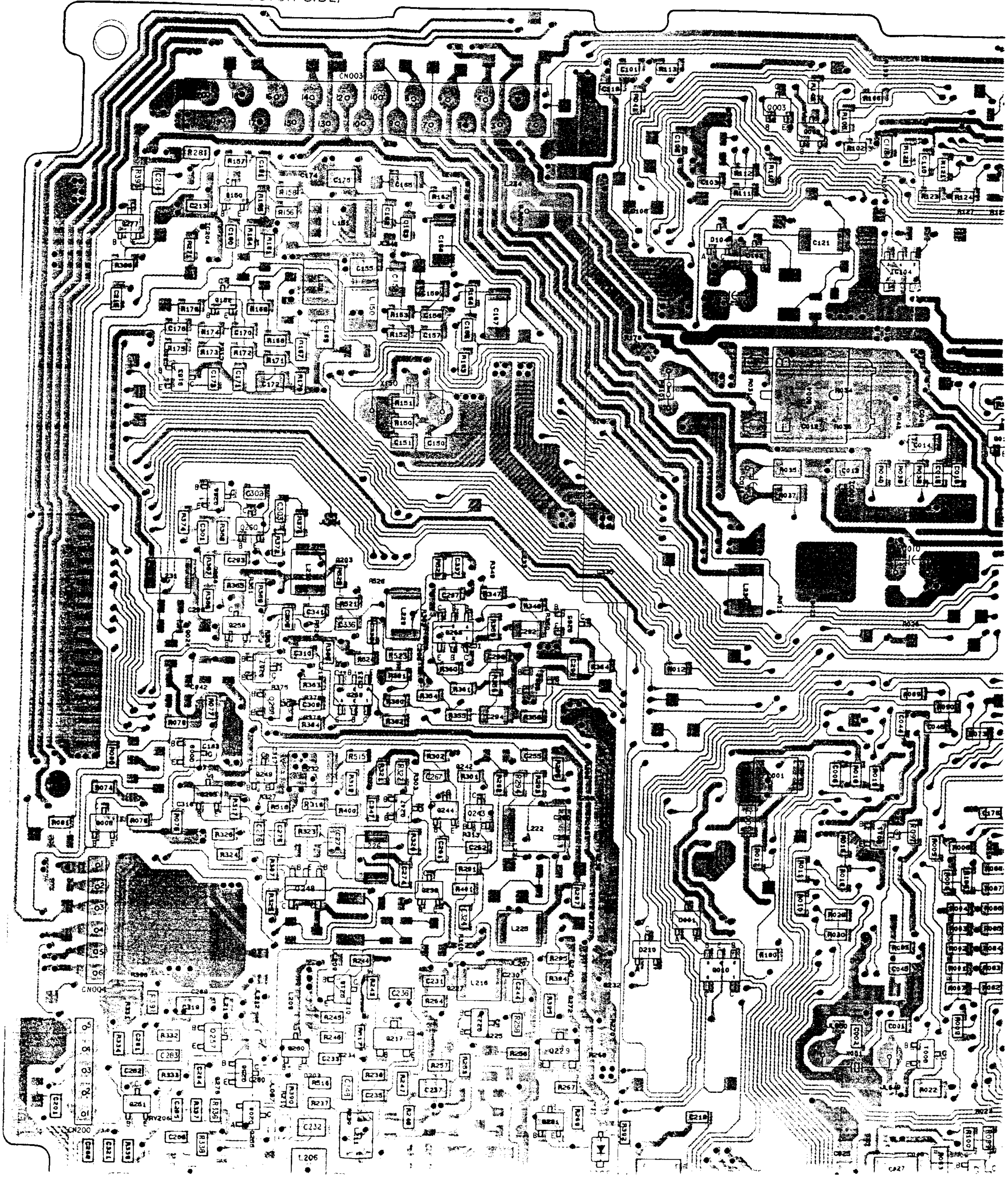
Email:- enquiries@mauritron.co.uk

SS-134 BOARD (CONDUCTOR SIDE)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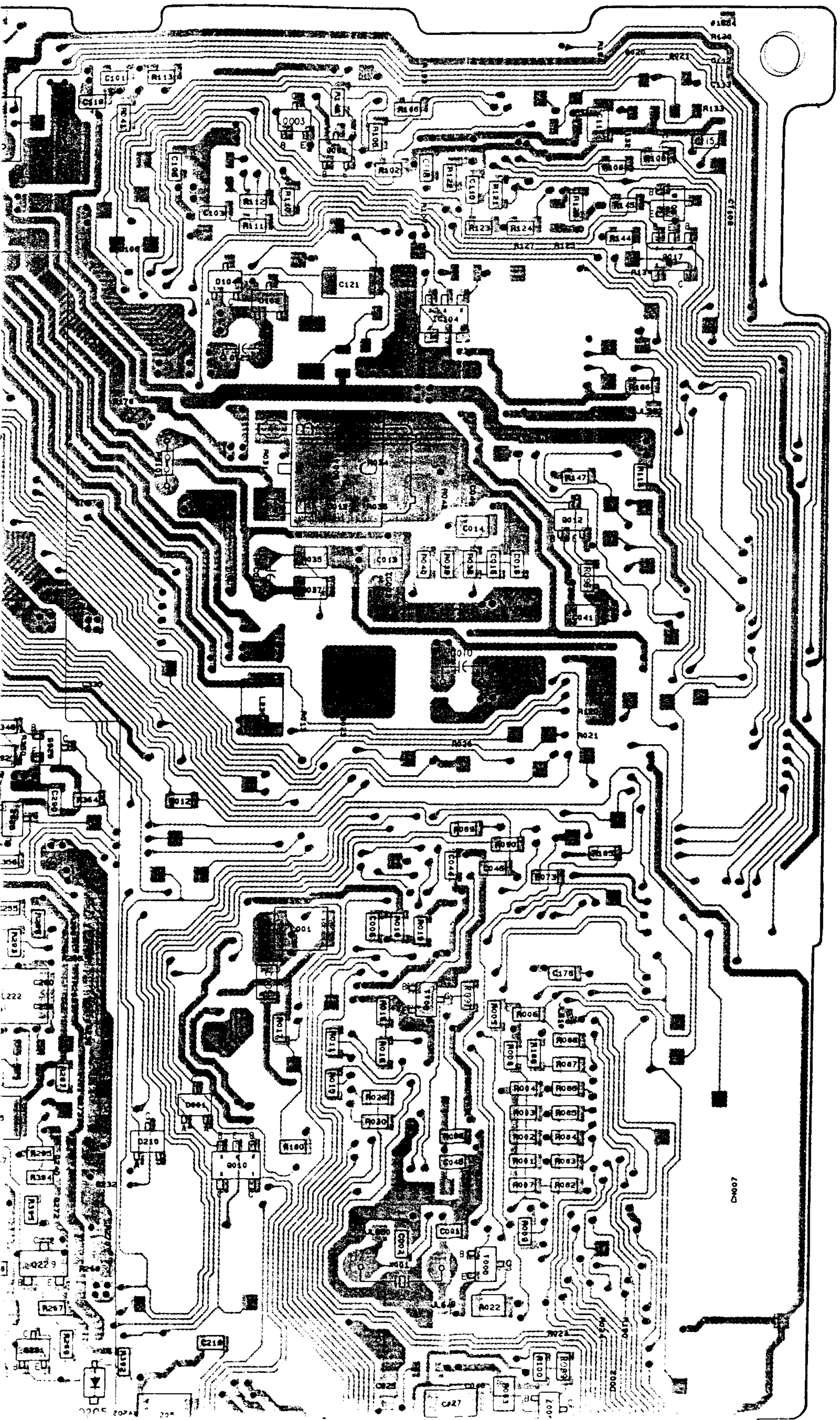
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R102
R121
R123
R124
R127
R128
R133
R144
Q017
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R112
D101
C121
IC104
R147
Q012
C014
C013
Q015
Q037
Q041
R021
R036
R012
R089
R090
R095
R073
C046
C176
R006
R086
R087
R084
R085
R083
R082
R081
R080
C001
Q004
R022
R023
Q010
R180
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R020
R030
C218
Q229
R247
L222
CN007

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D104	8-719-941-23	DA204U
D202	8-719-941-86	DAN202U
D203	8-719-941-86	DAN202U
D205	8-719-404-46	MA110
D208	8-719-941-86	DAN202U
D210	8-719-941-86	DAN202U
D211	8-719-941-86	DAN202U

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IC003	8-759-998-98	LM358D
IC004	8-759-148-05	CXA8010M
IC005	8-759-823-65	MCD002AM
IC006	8-759-990-55	CXA8006M
IC007	8-759-008-95	MC14028BF
IC008	8-759-748-72	BR93C46F
IC101	8-759-970-80	MB673198U
IC102	8-759-153-41	uPD6451AGT-611
IC104	8-759-234-20	TC7S08F
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IC202	8-759-998-92	LM393D
IC204	8-759-998-32	CXD-2107M
IC205	8-759-148-49	CXA1443N

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Q007	8-729-905-35	2SC4081-R
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Q009	8-729-905-35	2SC4081-R
Q010	8-729-907-03	FMG5
Q011	8-729-905-18	DTC144EU
Q012	8-729-905-18	DTC144EU
Q014	8-729-822-48	FC101
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Q153	8-729-905-23	2SA1576-R
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Q203	8-729-905-35	2SC4081-R
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Q214	8-729-119-76	2SA1175-HFE
Q215	8-729-216-22	2SA1162-G
Q217	8-729-102-07	2SC2223-F13
Q218	8-729-905-35	2SC4081-R
Q222	8-729-905-18	DTC144EU
Q223	8-729-905-35	2SC4081-R
Q224	8-729-904-07	FMG2
Q225	8-729-905-45	DTA143EU
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Q229	8-729-141-48	2SB624-BV345
Q230	8-729-141-48	2SB624-BV345
Q231	8-729-905-18	DTC144EU
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Q244	8-729-140-63	2SA1611-M5M6
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D202	8-719-941-86	DAN202U
D203	8-719-941-86	DAN202U
D205	8-719-404-46	MA110
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IC006	8-759-990-55	CXA8006M
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IC204	8-759-998-32	CXD-2107M
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Q009	8-729-905-35	2SC4081-R
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Q152	8-729-905-35	2SC4081-R
Q153	8-729-905-23	2SA1576-R
Q202	8-729-905-35	2SC4081-R
Q203	8-729-905-35	2SC4081-R
Q213	8-729-216-22	2SA1162-G
Q214	8-729-119-76	2SA1175-HFE
Q215	8-729-216-22	2SA1162-G
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Q223	8-729-905-35	2SC4081-R
Q224	8-729-904-07	FMG2
Q225	8-729-905-45	DTA143EU
Q227	8-729-905-35	2SC4081-R
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Q230	8-729-141-48	2SB624-BV345
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Q233	8-729-102-07	2SC2223-F13
Q234	8-729-102-07	2SC2223-F13
Q238	8-729-117-31	2SC4177-L5
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Q247	8-729-905-35	2SC4081-R
Q248	8-729-903-10	FMW1
Q249	8-729-905-18	DTC144EU

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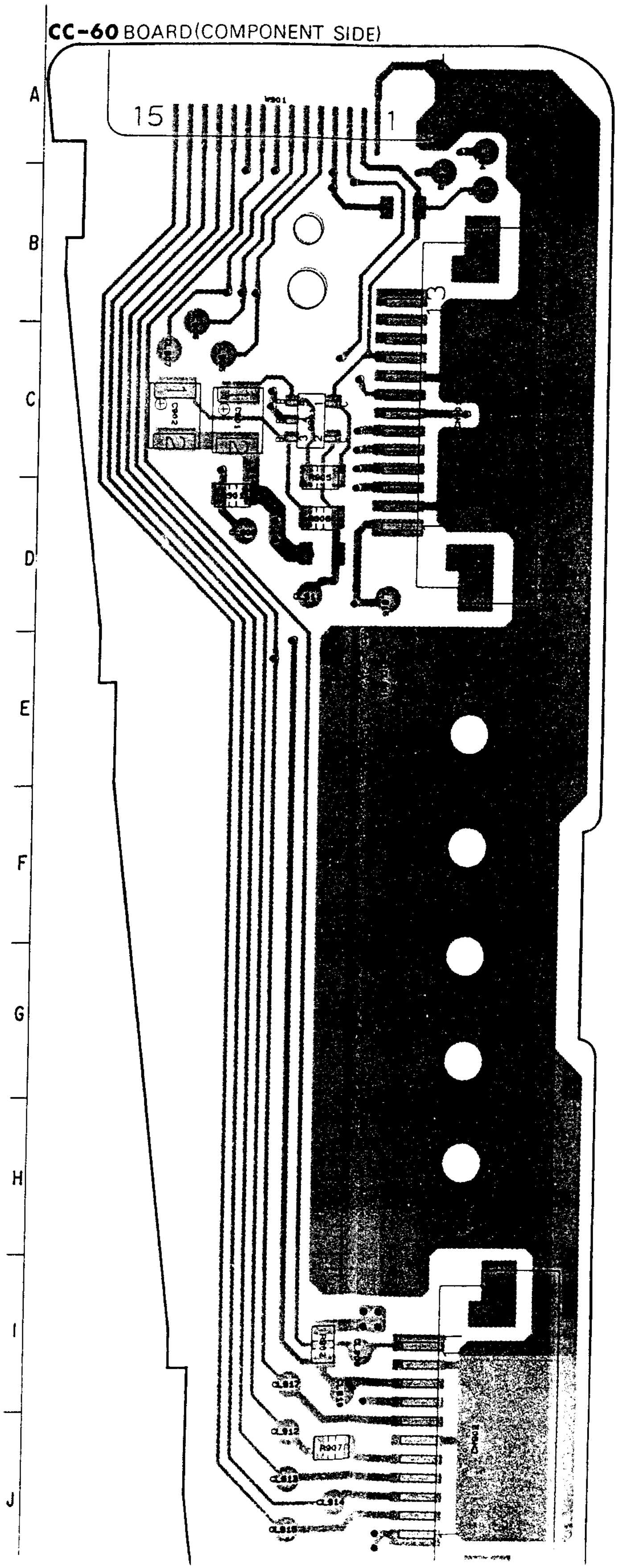
CC-60 BOARD(COMPONENT SIDE)



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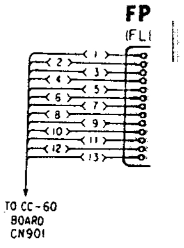

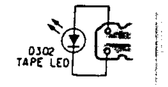

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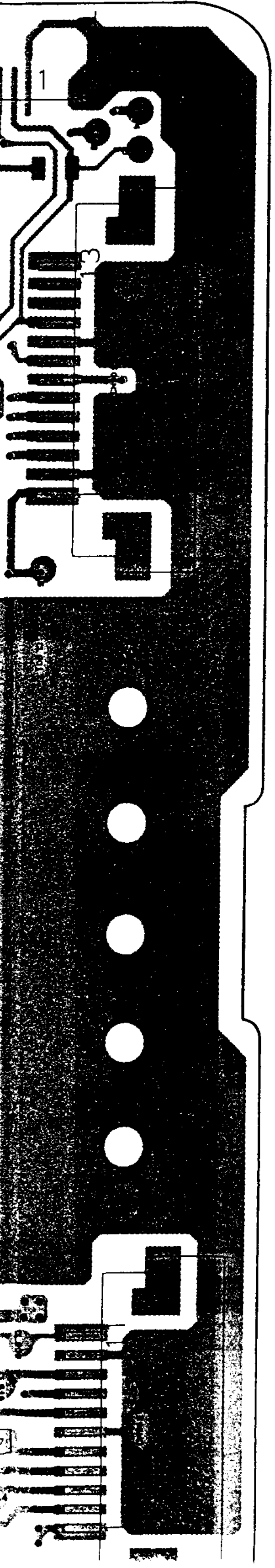
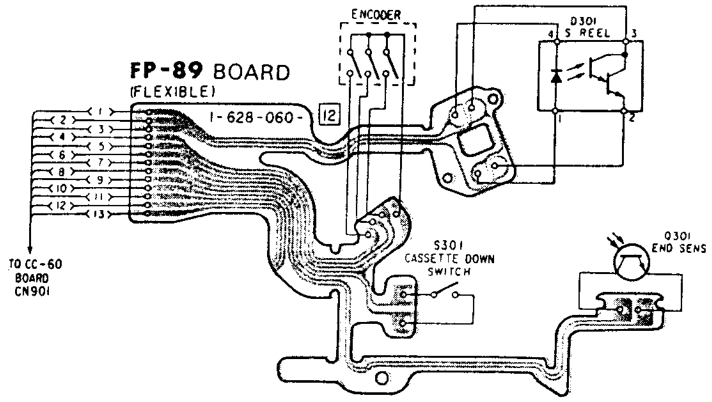


FP-89 BOARD
(FLEXIBLE)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3
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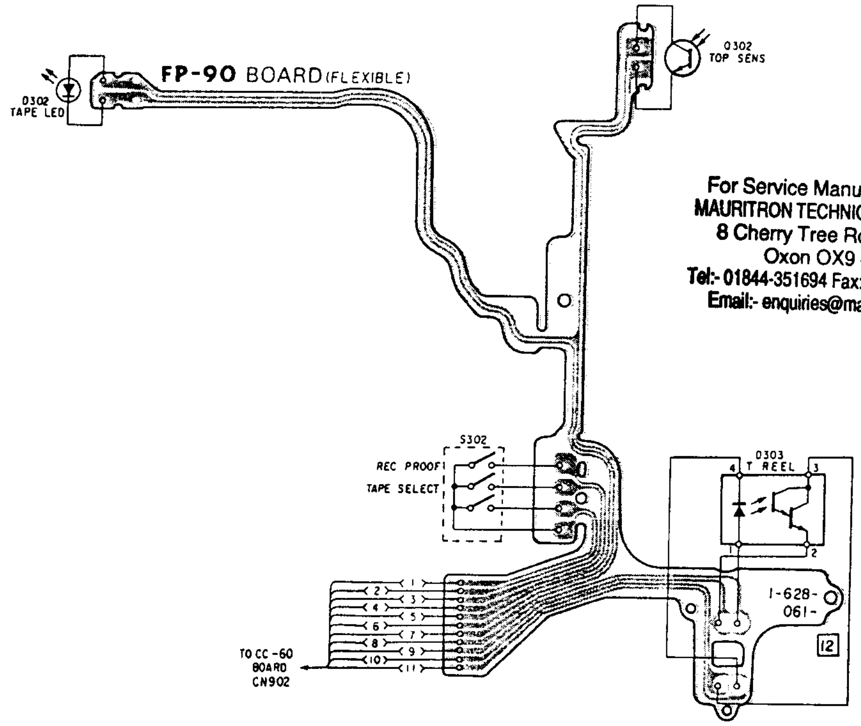
8
9
10
11
12
13
TO CC-60
BOARD
CN901
S301
CASSETTE DOWN
SWITCH
Q301
END SENS

FP-90 BOARD (FLEXIBLE)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TAPE LED
Q302
TOP SENS
S302
REC PROOF
TAPE SELECT
D303
T REEL
4
3
1
2
1-628-
061-
12
1
2
3
4
5
6
7
8
9
10
11
TO CC-60
BOARD
CN902

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8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

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D303 8-719-940-81 GL-452S

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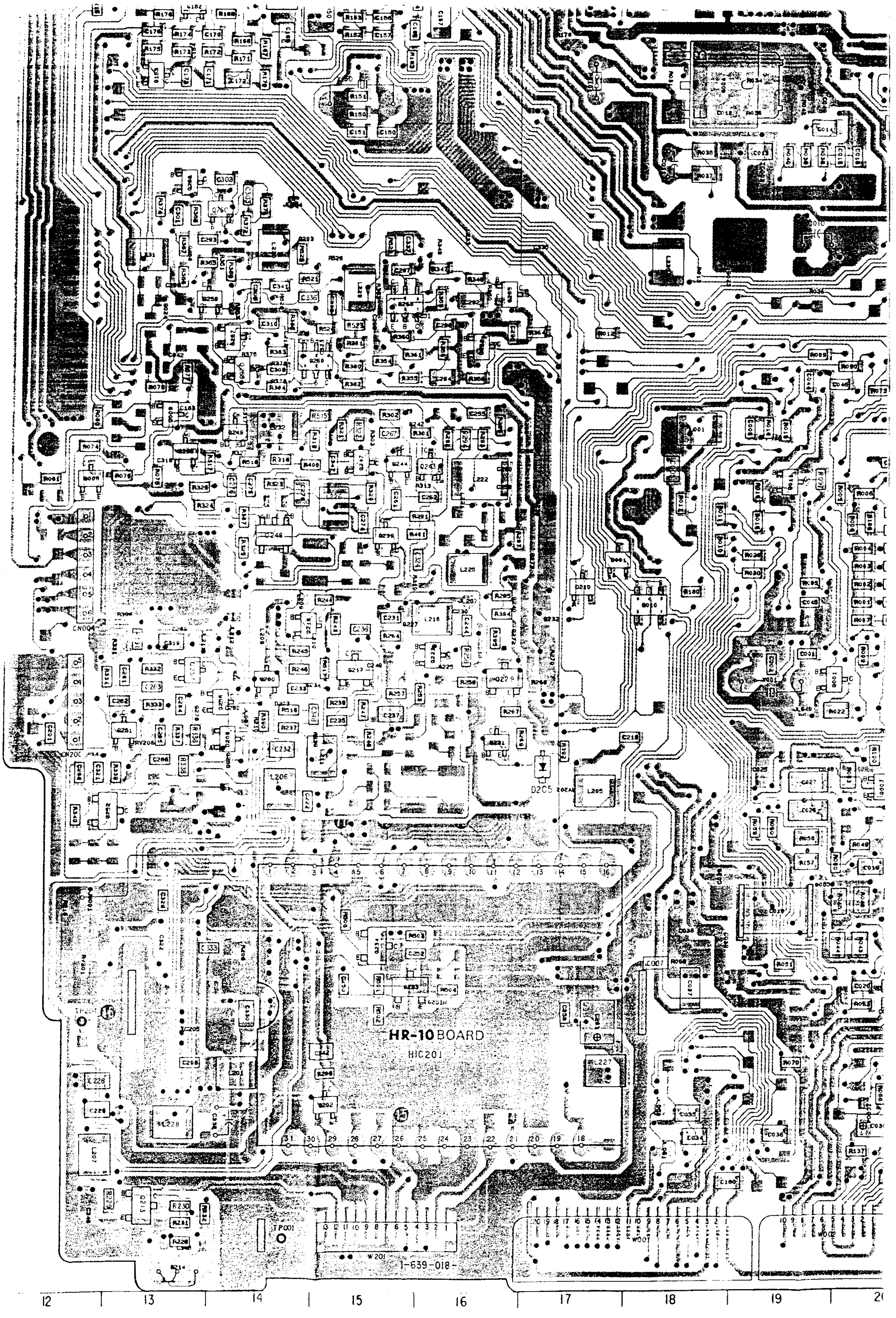
Q302 8-729-906-48 EE-TP109


HR-10 BOARD
HIC201
1-639-018
CN004
CN200
W201
W001
W002
TP001
D205
L205
L206
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L222
L225
L227
L228
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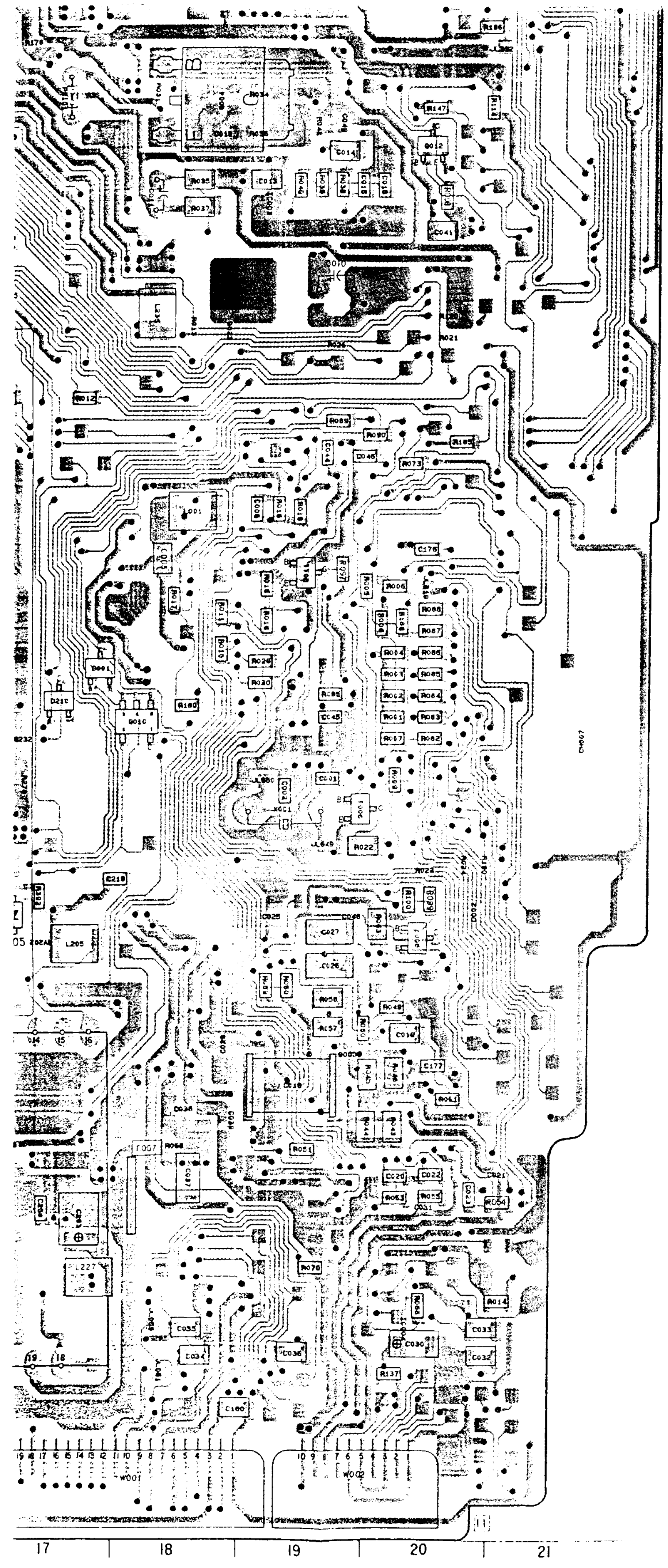

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Q010	8-729-907-03	FMG5
Q011	8-729-905-18	DTC144EU
Q012	8-729-905-18	DTC144EU
Q014	8-729-822-48	FC101
Q017	8-729-907-03	FMG5
Q018	8-729-905-18	DTC144EU
Q023	8-729-921-08	DTC144TU
Q150	8-729-905-23	2SA1576-R
Q152	8-729-905-35	2SC4081-R
Q153	8-729-905-23	2SA1576-R
Q202	8-729-905-35	2SC4081-R
Q203	8-729-905-35	2SC4081-R
Q213	8-729-216-22	2SA1162-G
Q214	8-729-119-76	2SA1175-HFE
Q215	8-729-216-22	2SA1162-G
Q217	8-729-102-07	2SC2223-F13
Q218	8-729-905-35	2SC4081-R
Q222	8-729-905-18	DTC144EU
Q223	8-729-905-35	2SC4081-R
Q224	8-729-904-07	FMG2
Q225	8-729-905-45	DTA143EU
Q227	8-729-905-35	2SC4081-R
Q229	8-729-141-48	2SB624-BV345
Q230	8-729-141-48	2SB624-BV345
Q231	8-729-905-18	DTC144EU
Q232	8-729-905-18	DTC144EU
Q233	8-729-102-07	2SC2223-F13
Q234	8-729-102-07	2SC2223-F13
Q238	8-729-117-31	2SC4177-L5
Q239	8-729-905-18	DTC144EU
Q240	8-729-905-18	DTC144EU
Q242	8-729-117-31	2SC4177-L5
Q243	8-729-905-18	DTC144EU
Q244	8-729-140-63	2SA1611-M5M6
Q247	8-729-905-35	2SC4081-R
Q248	8-729-903-10	FMW1
Q249	8-729-905-18	DTC144EU
Q250	8-729-905-12	DTA144EU
Q251	8-729-905-35	2SC4081-R
Q252	8-729-102-07	2SC2223-F13
Q254	8-729-905-35	2SC4081-R
Q255	8-729-904-07	FMG2
Q256	8-729-905-12	DTA144EU
Q257	8-729-905-18	DTC144EU
Q258	8-729-903-10	FMW1
Q259	8-729-905-35	2SC4081-R
Q260	8-729-905-35	2SC4081-R
Q261	8-729-905-23	2SA1576-R
Q262	8-729-905-23	2SA1576-R
Q263	8-729-907-26	IMX1
Q265	8-729-905-35	2SC4081-R
Q266	8-729-905-35	2SC4081-R
Q267	8-729-905-35	2SC4081-R
Q268	8-729-905-23	2SA1576-R
Q269	8-729-907-26	IMX1
Q272	8-729-922-94	DTC143TU
Q273	8-729-141-48	2SB624-BV345
Q277	8-729-905-35	2SC4081-R
Q278	8-729-905-35	2SC4081-R
Q280	8-729-905-35	2SC4081-R
Q291	8-729-907-26	IMX1
Q295	8-729-905-35	2SC4081-R

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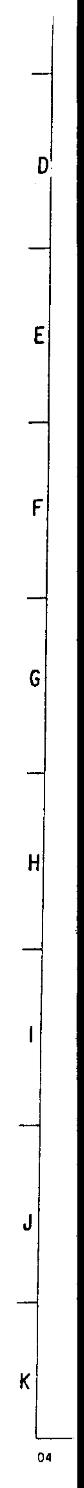

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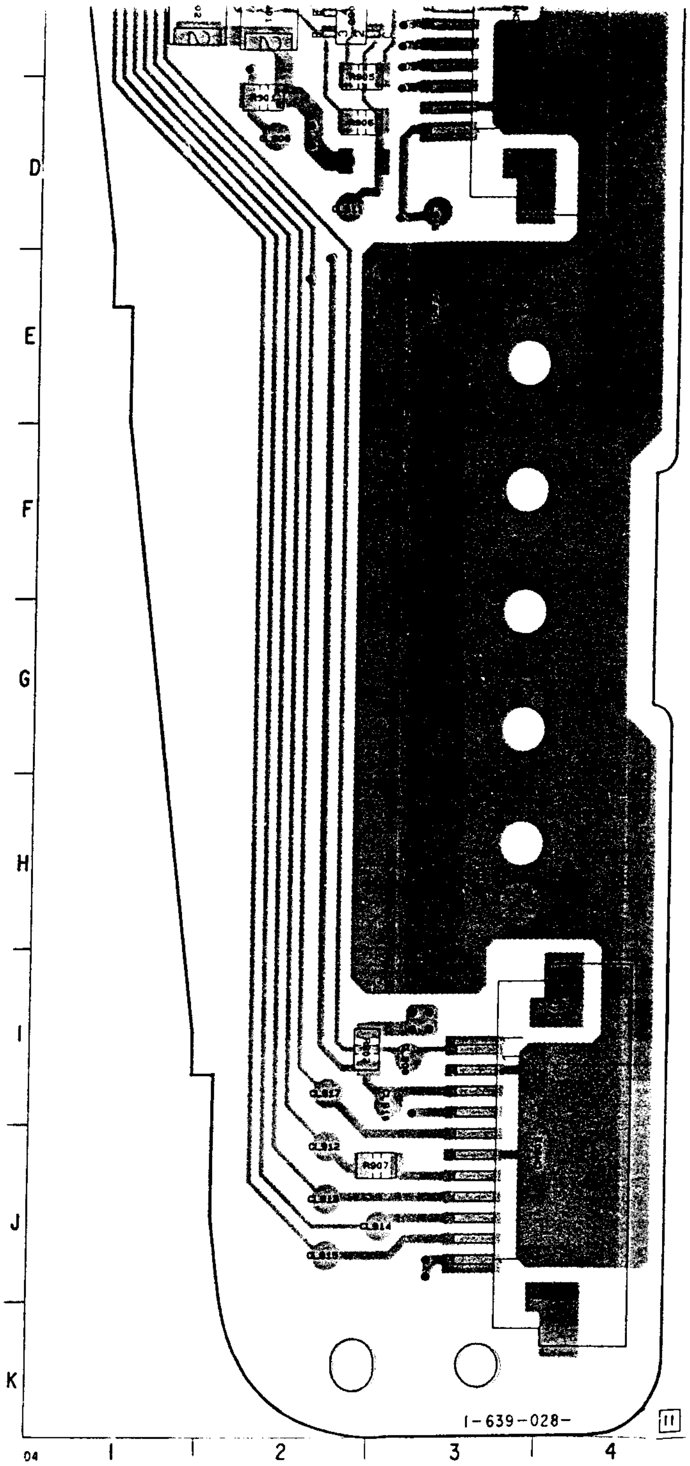
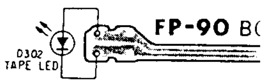
Q901

Q003	8-729-905-18	DTC144EU
Q004	8-729-820-47	2SB1202FAT
Q005	8-729-905-35	2SC4081-R
Q007	8-729-905-35	2SC4081-R
Q008	8-729-905-35	2SC4081-R
Q009	8-729-905-35	2SC4081-R
Q010	8-729-907-03	FMG5
Q011	8-729-905-18	DTC144EU
Q012	8-729-905-18	DTC144EU
Q014	8-729-822-48	FC101
Q017	8-729-907-03	FMG5
Q018	8-729-905-18	DTC144EU
Q023	8-729-921-08	DTC144TU
0150	8-729-905-23	2SA1576-R
0152	8-729-905-35	2SC4081-R
0153	8-729-905-23	2SA1576-R
0202	8-729-905-35	2SC4081-R
0203	8-729-905-35	2SC4081-R
213	8-729-216-22	2SA1162-G
214	8-729-119-76	2SA1175-HFE
215	8-729-216-22	2SA1162-G
217	8-729-102-07	2SC2223-F13
218	8-729-905-35	2SC4081-R
222	8-729-905-18	DTC144EU
223	8-729-905-35	2SC4081-R
224	8-729-904-07	FMG2
225	8-729-905-45	DTA143EU
227	8-729-905-35	2SC4081-R
229	8-729-141-48	2SB624-BV345
230	8-729-141-48	2SB624-BV345
231	8-729-905-18	DTC144EU
232	8-729-905-18	DTC144EU
233	8-729-102-07	2SC2223-F13
234	8-729-102-07	2SC2223-F13
238	8-729-117-31	2SC4177-L5
239	8-729-905-18	DTC144EU
240	8-729-905-18	DTC144EU
242	8-729-117-31	2SC4177-L5
243	8-729-905-18	DTC144EU
244	8-729-140-63	2SA1611-M5M6
247	8-729-905-35	2SC4081-R
248	8-729-903-10	FMW1
249	8-729-905-18	DTC144EU
250	8-729-905-12	DTA144EU
251	8-729-905-35	2SC4081-R
252	8-729-102-07	2SC2223-F13
254	8-729-905-35	2SC4081-R
255	8-729-904-07	FMG2
256	8-729-905-12	DTA144EU
57	8-729-905-18	DTC144EU
58	8-729-903-10	FMW1
59	8-729-905-35	2SC4081-R
60	8-729-905-35	2SC4081-R
61	8-729-905-23	2SA1576-R
62	8-729-905-23	2SA1576-R
63	8-729-907-26	IMX1
65	8-729-905-35	2SC4081-R
66	8-729-905-35	2SC4081-R
67	8-729-905-35	2SC4081-R
68	8-729-905-23	2SA1576-R
69	8-729-907-26	IMX1
72	8-729-922-94	DTC143TU
73	8-729-141-48	2SB624-BV345
77	8-729-905-35	2SC4081-R
78	8-729-905-35	2SC4081-R
30	8-729-905-35	2SC4081-R
31	8-729-907-26	IMX1
35	8-729-905-35	2SC4081-R

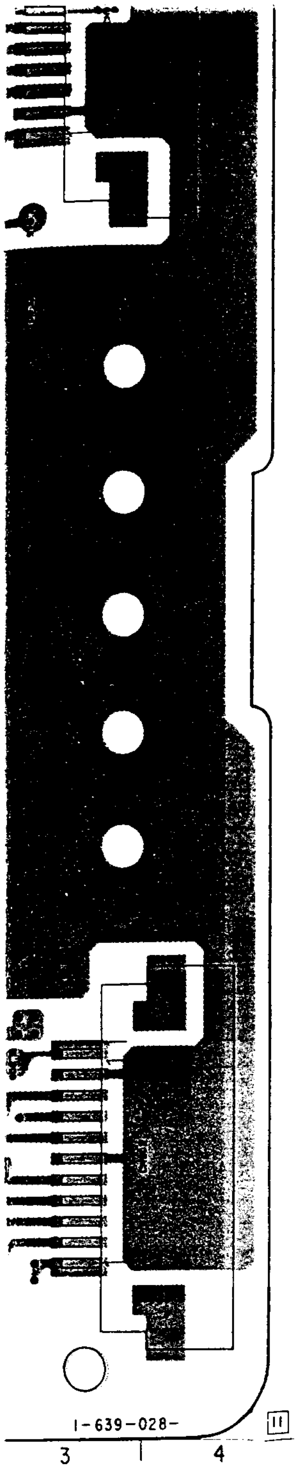


< TRANSISTOR >
Q901 8-729-902-93 FMG4



< DIODE >
D302
D303

< TRANSIS
Q302


1-639-028-
11
3
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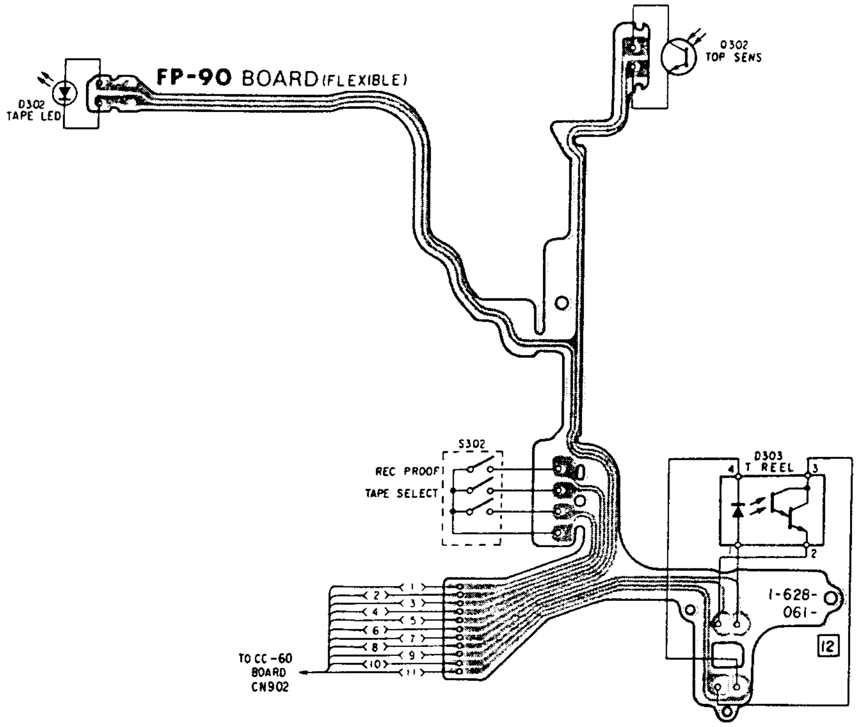
FP-90 BOARD (FLEXIBLE)
D302
TAPE LED
Q302
TOP SENS
S302
REC PROOF
TAPE SELECT
D303
T REEL
4
3
2
1-628-061-
12
TO CC-60 BOARD CN902
1
2
3
4
5
6
7
8
9
10
11

< DIODE >

D302	8-719-801-55	TLP907-0
D303	8-719-940-81	GL-452S

< TRANSISTOR >

Q302	8-729-906-48	EE-TP109

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FD-44 (MODE CONTROL, CHARACTOR GENERATOR), FK-47 (FUNCTION SWITCH), FA-2 (FOCUS SWITCH), LI-33 (LIT

—Ref. No. FD-44 BOARD: 4000 series, FK-47, FA-2, LI-33, FP-376 BOARDS: 5000 series—

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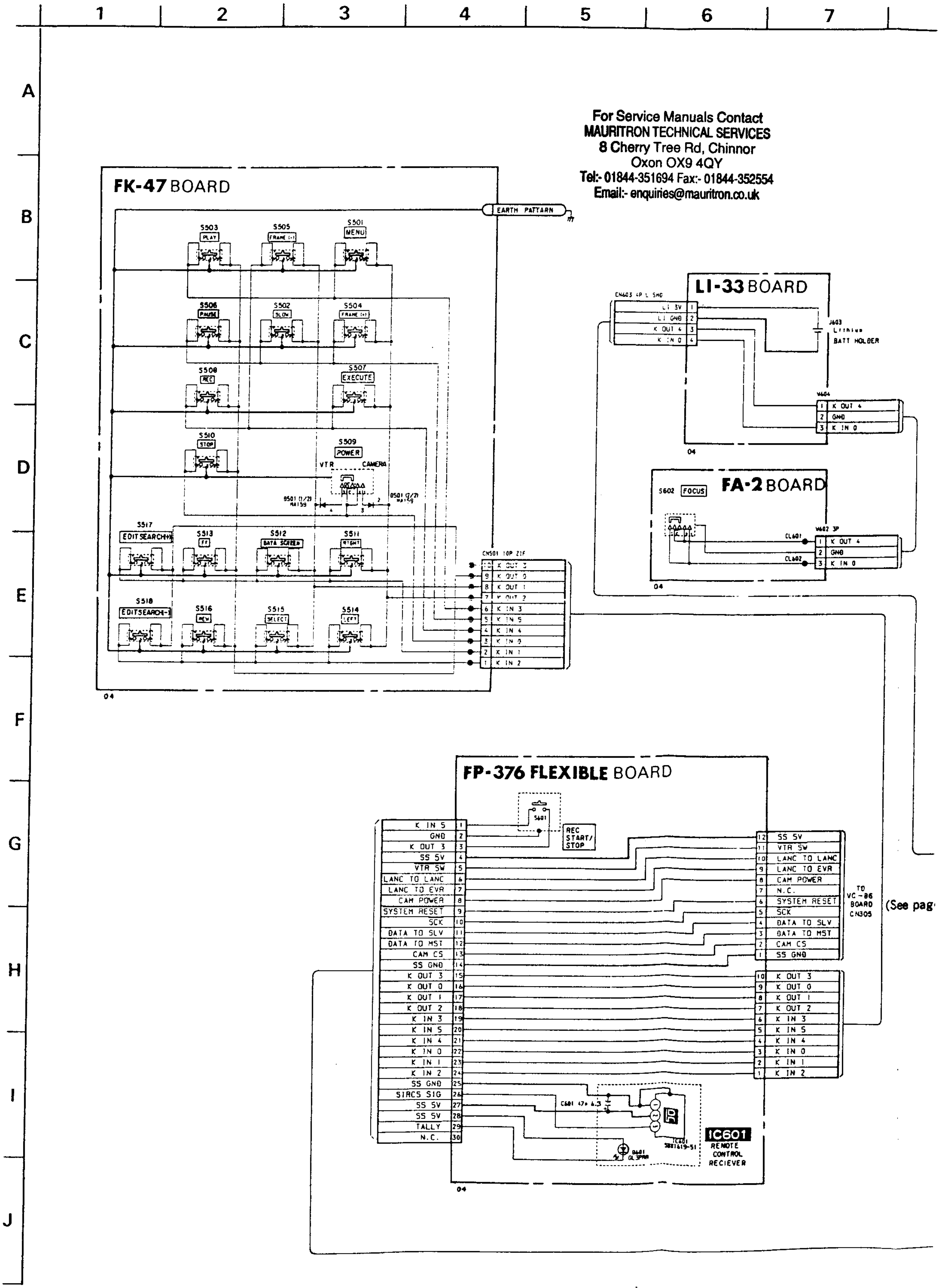
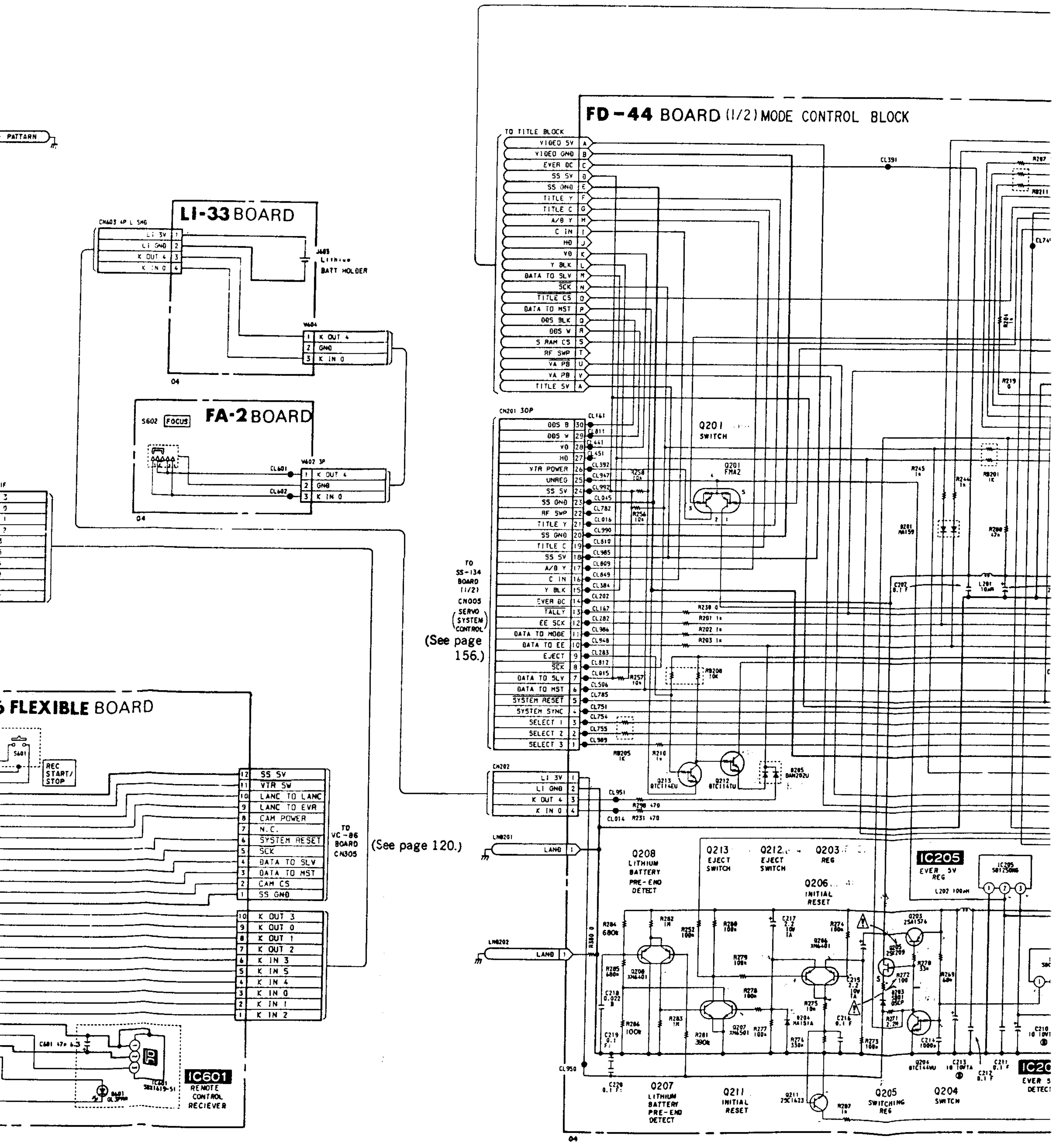
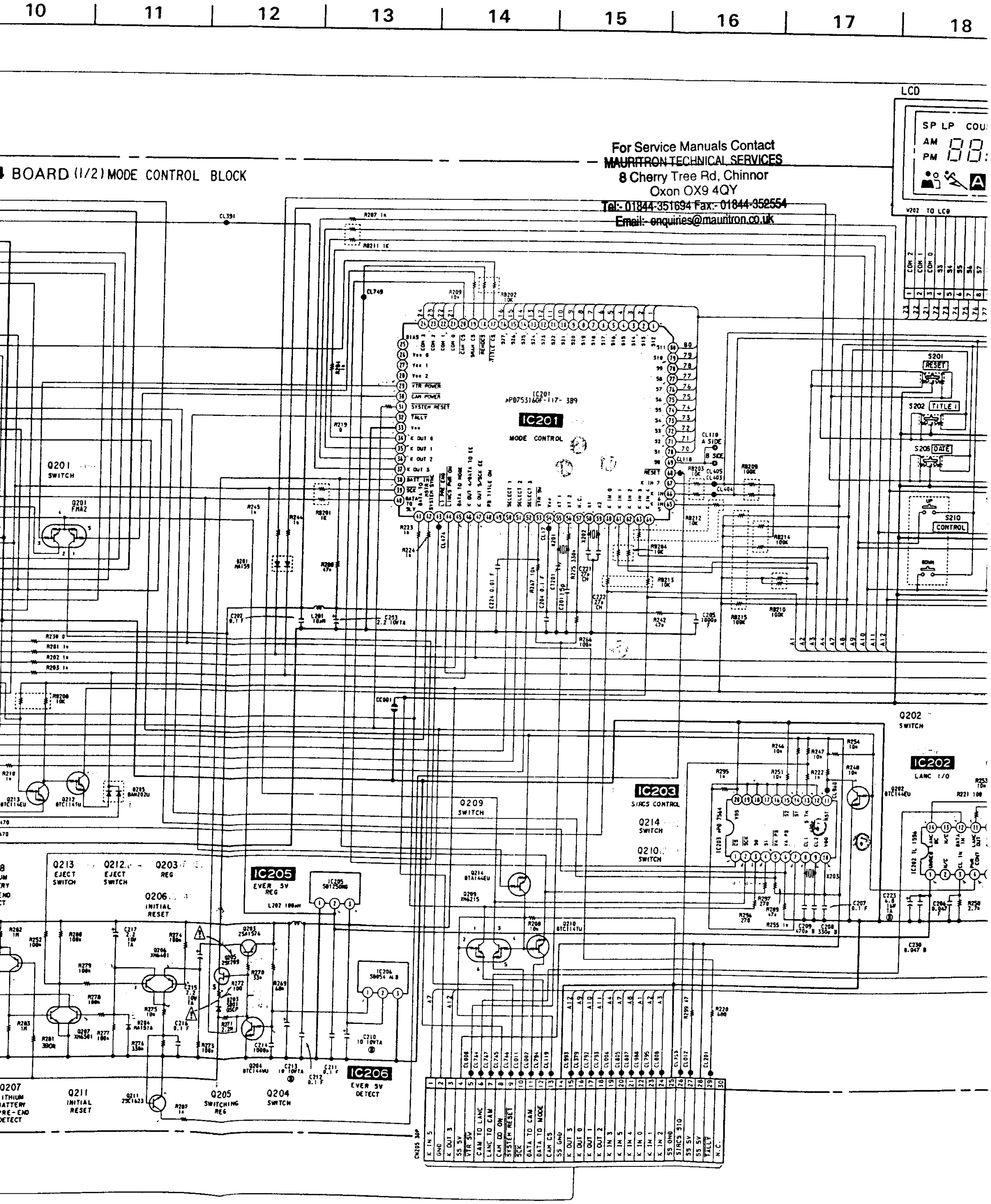

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
FK-47 BOARD
EARTH PATTARN
S503 PLAY
S505 FRAME (-)
S501 MENU
S506 PAUSE
S502 SLOW
S504 FRAME (+)
S508 REC
S507 EXECUTE
S510 STOP
S509 POWER
VTR
CAMERA
D501 (1/2) MA159
D501 (2/2) MA159
S517 EDIT SEARCH(+)
S513 FF
S512 DATA SCREEN
S511 RIGHT
S518 EDIT SEARCH(-)
S516 REW
S515 SELECT
S514 LEFT
CN501 10P ZIF
10 K OUT 3
9 K OUT 0
8 K OUT 1
7 K OUT 2
6 K IN 3
5 K IN 5
4 K IN 4
3 K IN 0
2 K IN 1
1 K IN 2
04
LI-33 BOARD
CN603 4P L SHD
1 LI 3V
2 LI GND
3 K OUT 4
4 K IN 0
J603 Lithium BATT HOLDER
W604
1 K OUT 4
2 GND
3 K IN 0
FA-2 BOARD
S602 FOCUS
CL601
CL602
W602 3P
1 K OUT 4
2 GND
3 K IN 0
FP-376 FLEXIBLE BOARD
S601
REC START/STOP
1 K IN 5
2 GND
3 K OUT 3
4 SS 5V
5 VTR SW
6 LANC TO LANC
7 LANC TO EVR
8 CAM POWER
9 SYSTEM RESET
10 SCK
11 DATA TO SLV
12 DATA TO MST
13 CAM CS
14 SS GND
15 K OUT 3
16 K OUT 0
17 K OUT 1
18 K OUT 2
19 K IN 3
20 K IN 5
21 K IN 4
22 K IN 0
23 K IN 1
24 K IN 2
25 SS GND
26 SIRCS SIG
27 SS 5V
28 SS 5V
29 TALLY
30 N.C.
12 SS 5V
11 VTR SW
10 LANC TO LANC
9 LANC TO EVR
8 CAM POWER
7 N.C.
6 SYSTEM RESET
5 SCK
4 DATA TO SLV
3 DATA TO MST
2 CAM CS
1 SS GND
TO VC-86 BOARD CN305
(See pag
10 K OUT 3
9 K OUT 0
8 K OUT 1
7 K OUT 2
6 K IN 3
5 K IN 5
4 K IN 4
3 K IN 0
2 K IN 1
1 K IN 2
C601 47μ 6.3
IC601 SBX1619-51
D601 GL3PR8
IC601 REMOTE CONTROL RECIEVER
04


PATTARN
LI-33 BOARD
CN603 4P L SHG
LI 3V
LI GND
K OUT 4
K IN 0
J483 Lithium BATT HOLDER
W604
K OUT 4
GND
K IN 0
FA-2 BOARD
S602 FOCUS
CL601
CL602
W602 3P
FD-44 BOARD (1/2) MODE CONTROL BLOCK
TO TITLE BLOCK
VIDEO 5V
VIDEO GND
EVER DC
SS 5V
SS GND
TITLE Y
TITLE C
A/B Y
C IN
HD
VD
Y BLK
DATA TO SLV
SCK
TITLE CS
DATA TO MST
OOS BLK
OOS V
S RAM CS
RF SWP
VA PB
TITLE 5V
CN201 30P
VTR POWER
UNREG
TALLY
EE SCK
DATA TO MODE
DATA TO EE
EJECT
SYSTEM RESET
SYSTEM SYNC
SELECT 1
SELECT 2
SELECT 3
TO SS-134 BOARD (1/2) CN005 SERVO SYSTEM CONTROL
(See page 156.)
Q201 SWITCH
Q201 FMA2
CN202
LN8201
LAND
LN8202
Q208 LITHIUM BATTERY PRE-END DETECT
Q213 EJECT SWITCH
Q212 EJECT SWITCH
Q203 REG
Q206 INITIAL RESET
IC205 EVER 5V REG
Q207 LITHIUM BATTERY PRE-END DETECT
Q211 INITIAL RESET
Q205 SWITCHING REG
Q204 SWITCH
IC20 EVER 5 DETECT
FLEXIBLE BOARD
S601
REC START/STOP
SS 5V
VTR 5V
LANC TO LANC
LANC TO EVR
CAM POWER
N.C.
SYSTEM RESET
SCK
DATA TO SLV
DATA TO MST
CAM CS
SS GND
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
TO VC-86 BOARD CN305
(See page 120.)
IC601 REMOTE CONTROL RECIEVER

P-376 (REMOTE COMMAND RECIEVER, REC SWITCH) SCHEMATIC DIAGRAM


10
11
12
13
14
15
16
17
18
BOARD (1/2) MODE CONTROL BLOCK
LCD
SP LP
AM
PM
TO LCD
IC201
μPD75316GF-117-3B9
MODE CONTROL
VTR POWER
CAM POWER
SYSTEM RESET
TALLY
K OUT 0
K OUT 1
K OUT 2
K OUT 3
BATT INFO
SCK
DATA TO SYSTEM
SELECT 1
SELECT 2
SELECT 3
K IN 0
K IN 1
K IN 2
K IN 3
RESET
S201 RESET
S202 TITLE
S206 DATE
S210 CONTROL
UP
DOWN
Q201 SWITCH
Q201 FMA2
Q202 SWITCH
IC202 LANC I/O
IC203 SIRCS CONTROL
IC205 EVER 5V REG
IC206 EVER 5V DETECT
Q209 SWITCH
Q214 SWITCH
Q210 SWITCH
Q213 EJECT SWITCH
Q212 EJECT SWITCH
Q203 REG
Q206 INITIAL RESET
Q207 LITHIUM BATTERY PRE-END DETECT
Q211 INITIAL RESET
Q205 SWITCHING REG
Q204 SWITCH
CN205 30P
K IN 5
GND
K OUT 3
SS 5V
VTR 5V
CAM TO LANC
LANC TO CAM
CAM DD ON
SYSTEM RESET
SCK
DATA TO CAM
DATA TO MODE
CAM CS
SS GND
K OUT 3
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 4
K IN 0
K IN 1
K IN 2
SS GND
SIRCS SIG
SS 5V
SS 5V
TALLY
N.C.

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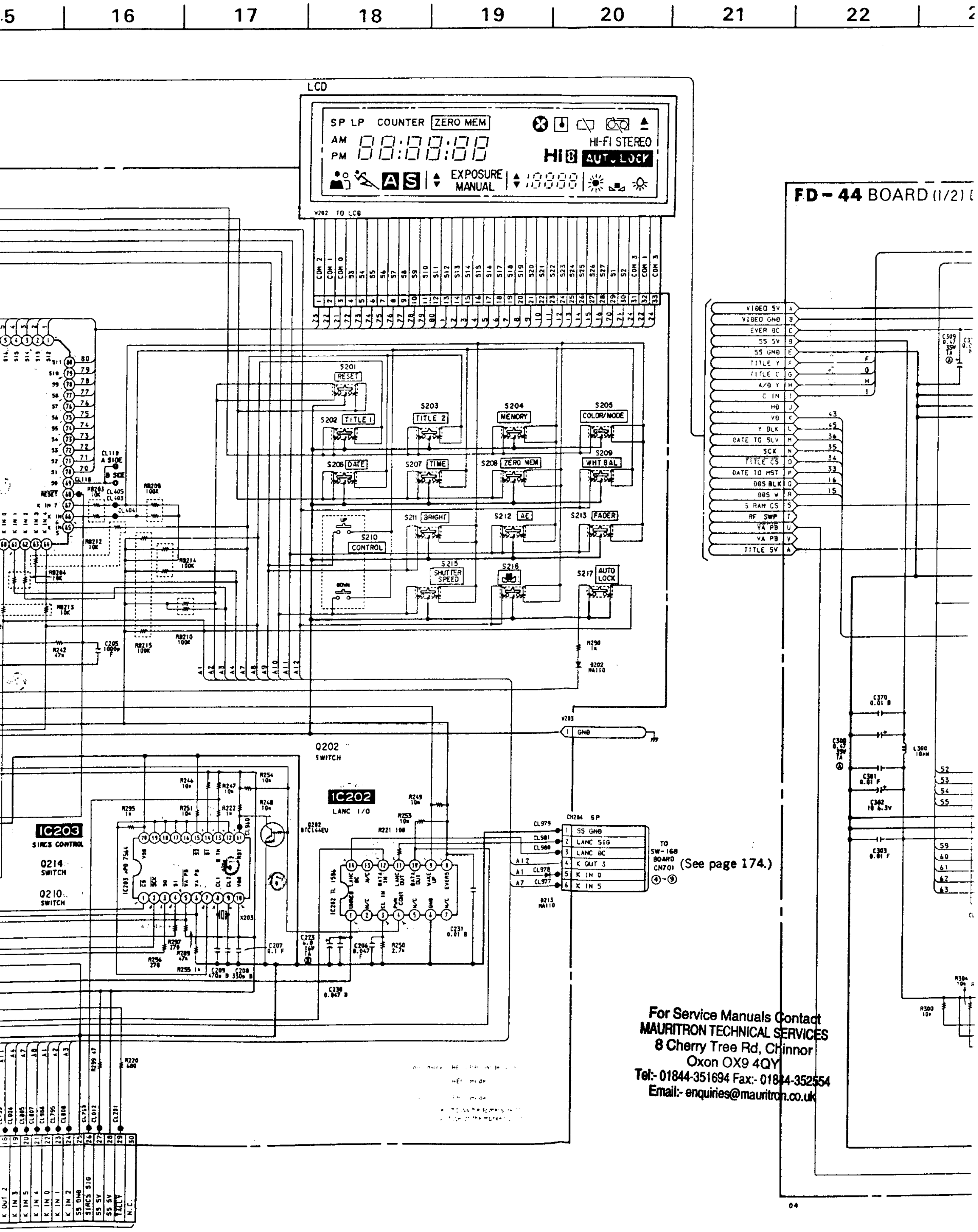

15
16
17
18
19
20
21
22
LCD
SP LP COUNTER ZERO MEM
AM
PM
88:88:88
HI-FI STEREO
Hi8
AUTO LOCK
EXPOSURE
MANUAL
V202 TO LCD
COM 2
COM 1
COM 0
FD-44 BOARD (1/2)
S201 RESET
S202 TITLE 1
S203 TITLE 2
S204 MEMORY
S205 COLOR/MODE
S206 DATE
S207 TIME
S208 ZERO MEM
S209 WHT BAL
S210 CONTROL
UP
DOWN
S211 BRIGHT
S212 AE
S213 FADER
S215 SHUTTER SPEED
S216
S217 AUTO LOCK
VIDEO 5V
VIDEO GND
EVER 0C
SS 5V
SS GND
TITLE Y
TITLE C
A/D Y
C IN
HD
VD
Y BLK
DATE TO SLV
SCK
TITLE CS
DATE TO MST
DOS BLK
DOS W
S RAM CS
RF SWP
VA PB
VA PB
TITLE 5V
RESET
CL110 A SIDE
B SIDE
R290 1k
D202 MA110
V203
GND
Q202 SWITCH
IC202
LANC I/O
IC203
SIRCS CONTROL
Q214 SWITCH
Q210 SWITCH
Q202 DTC144EV
R221 100
CN204 6P
SS GND
LANC SIG
LANC DC
K OUT 3
K IN 0
K IN 5
TO SW-168 BOARD CN701 ④-⑨
(See page 174.)
D213 MA110
C370 0.01 B
L300 10μH
K OUT 2
K IN 3
K IN 5
K IN 0
K IN 1
K IN 2
SS GND
SIRCS SIO
SS 5V
SS 5V
TALLY
N.C.

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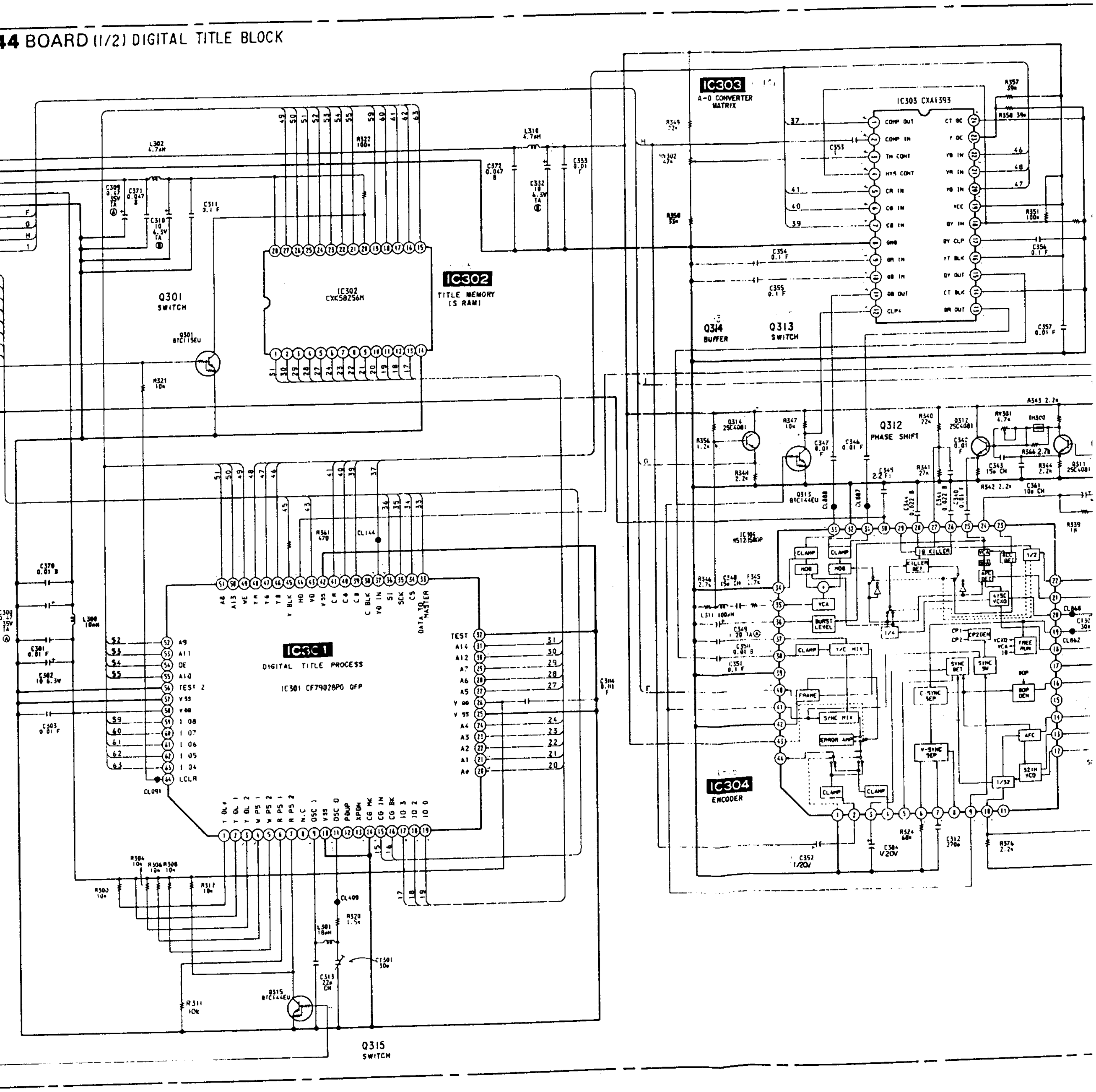
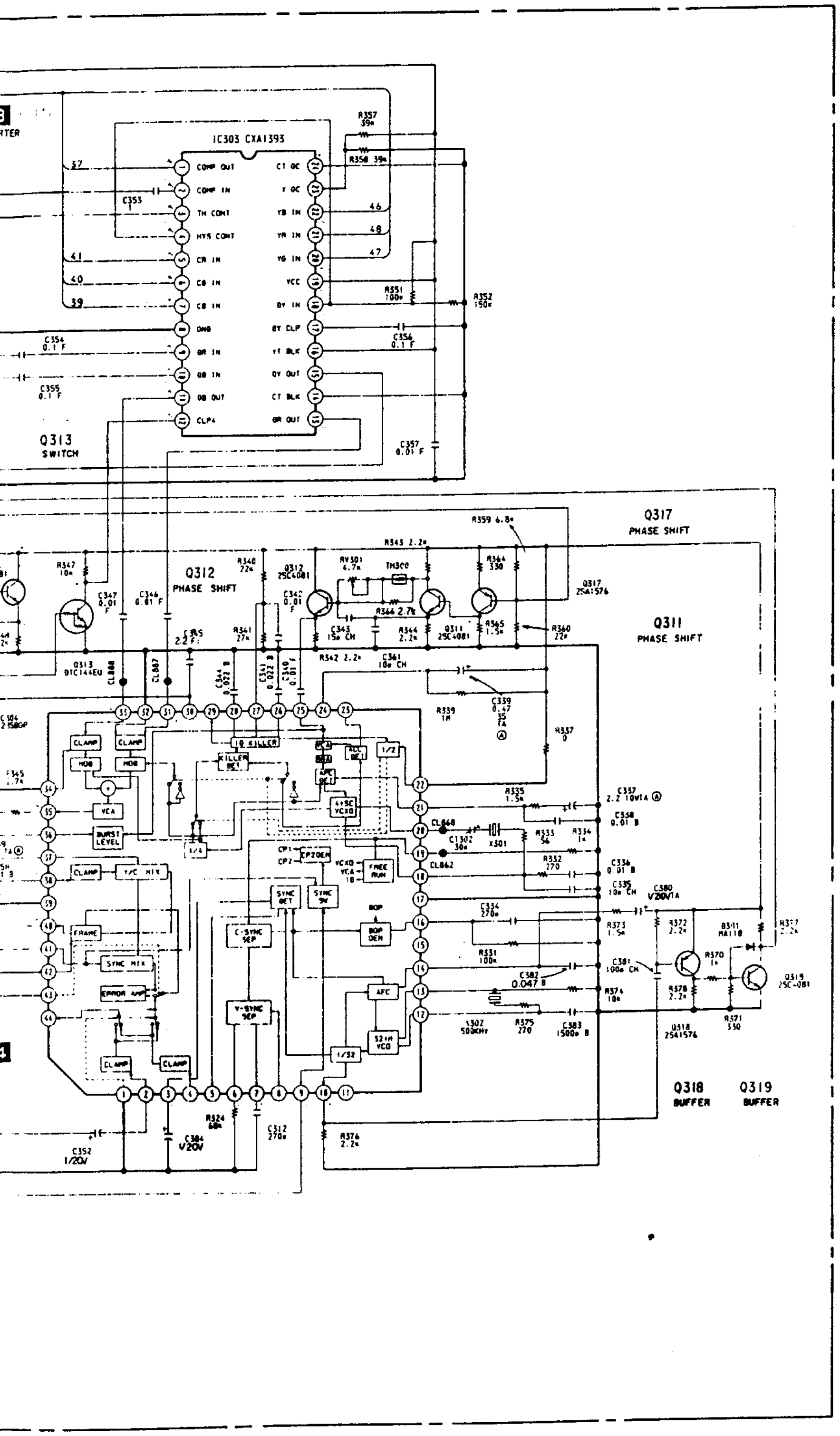
22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30

44 BOARD (1/2) DIGITAL TITLE BLOCK



IC303
A-D CONVERTER MATRIX
IC303 CXA1393
COMP OUT
COMP IN
TH CONT
HYS CONT
CR IN
CG IN
CB IN
GND
BR IN
BB IN
BB OUT
CLP
CT GC
Y GC
YB IN
YR IN
YG IN
VCC
BY IN
BY CLP
YT BLK
BY OUT
CT BLK
BR OUT
IC302
TITLE MEMORY (S RAM)
IC302 CXK58256M
Q301 SWITCH
Q301 DTC115EU
L302 4.7uH
L310 4.7uH
Q314 BUFFER
Q313 SWITCH
Q312 PHASE SHIFT
Q314 2SC4081
Q313 DTC144EU
Q312 2SC4081
Q311 2SC4081
IC304 MS1215BGP
KILLER
KILLER DET
CLAMP
MOD
YCA
BURST LEVEL
F/C MIX
FRAME
SYNC MIX
ERROR AMP
C-SYNC SEP
V-SYNC SEP
SYNC DET
SYNC SW
FREE RUN
BOP DEN
AFC
1/32
32fH VCO
IC304
ENCODER
IC301
DIGITAL TITLE PROCESS
IC301 CF79028PG QFP
TEST
LCLR
DATA TO MASTER
Q315 DTC144EU
Q315 SWITCH
L301 18uH
L300 10uH
CL400
C1301

28 | 29 | 30 | 31 | 32 | 33


IC303 CXA1393
COMP OUT
COMP IN
TH CONT
HYS CONT
CR IN
CB IN
OHB
BR IN
BB IN
BB OUT
CLP4
CT OC
Y OC
YB IN
YR IN
YG IN
VCC
BY IN
BY CLP
YT BLK
BY OUT
CT BLK
BR OUT
R357 39k
R358 39k
C353
C354 0.1 F
C355 0.1 F
C356 0.1 F
C357 0.01 F
R351 100k
R352 150k
Q313 SWITCH
Q312 PHASE SHIFT
Q317 PHASE SHIFT
Q311 PHASE SHIFT
Q318 BUFFER
Q319 BUFFER
R359 6.8k
R343 2.2k
RV301 4.7k
TH300
R364 330
Q317 2SA1576
Q312 2SC4081
Q311 2SC4081
Q313 DTC144EU
R342 2.2k
C361 10u CH
C339 0.47 35 TA
R339 1M
R337 0
CLAMP
HOB
VCA
BURST LEVEL
Y/C MIX
FRAME
SYNC MIX
ERROR AMP
KILLER DET
APC DET
4fSC VCXO
FREE RUN
SYNC DET
SYNC SW
C-SYNC SEP
V-SYNC SEP
BOP GEN
AFC
32fH VCO
1/32
CP2GEN
C337 2.2 10V TA
C358 0.01 B
X301
C1302 30p
C336 0.01 B
C335 10u CH
C380 V20V TA
C334 270p
R373 1.5k
R372 2.2k
D311 MA110
R370 1k
R377 2.2k
C381 100u CH
C382 0.047 B
R331 100k
R374 10k
R378 2.2k
X302 500kHz
R375 270
C383 1500p B
Q318 2SA1576
R371 330
Q319 2SC4081
R324 68k
C352 1/20V
C384 V20V
C312 270p
R376 2.2k

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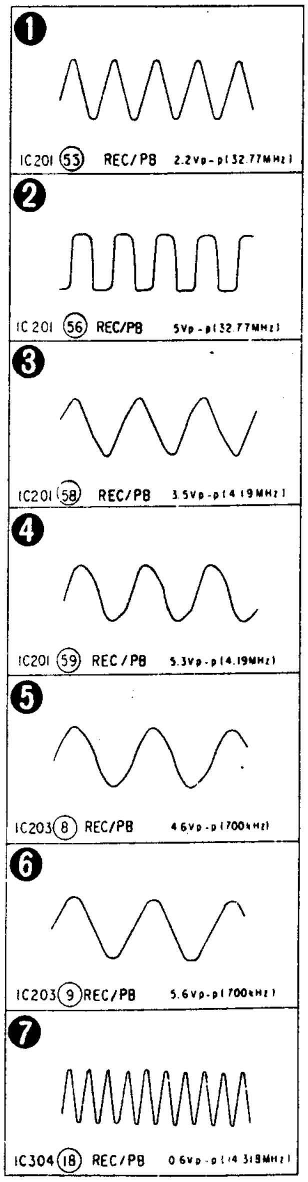
FD-44 BOARD



MODE CONTROL

< DIODE >

D201	8-719-940-45	DWA010
D202	8-719-404-46	MA110
D203	8-719-938-72	SB01-05CP
D204	8-719-420-36	MA151A
D205	8-719-941-86	DAN202U
D213	8-719-404-46	MA110
D301	8-719-404-46	MA110

< IC >

IC201	8-759-153-53	uPD75316G
IC202	8-759-999-02	TL1596CD
IC203	8-759-145-63	uPD7564G-
IC205	8-759-937-54	S-81250HG
IC206	8-759-937-56	S-8054AL8
IC301	8-759-998-30	CF79028PG
IC302	8-752-326-23	CXK58257M-
IC303	8-752-039-49	CXA1393AN
IC304	8-759-634-47	M51285BGP

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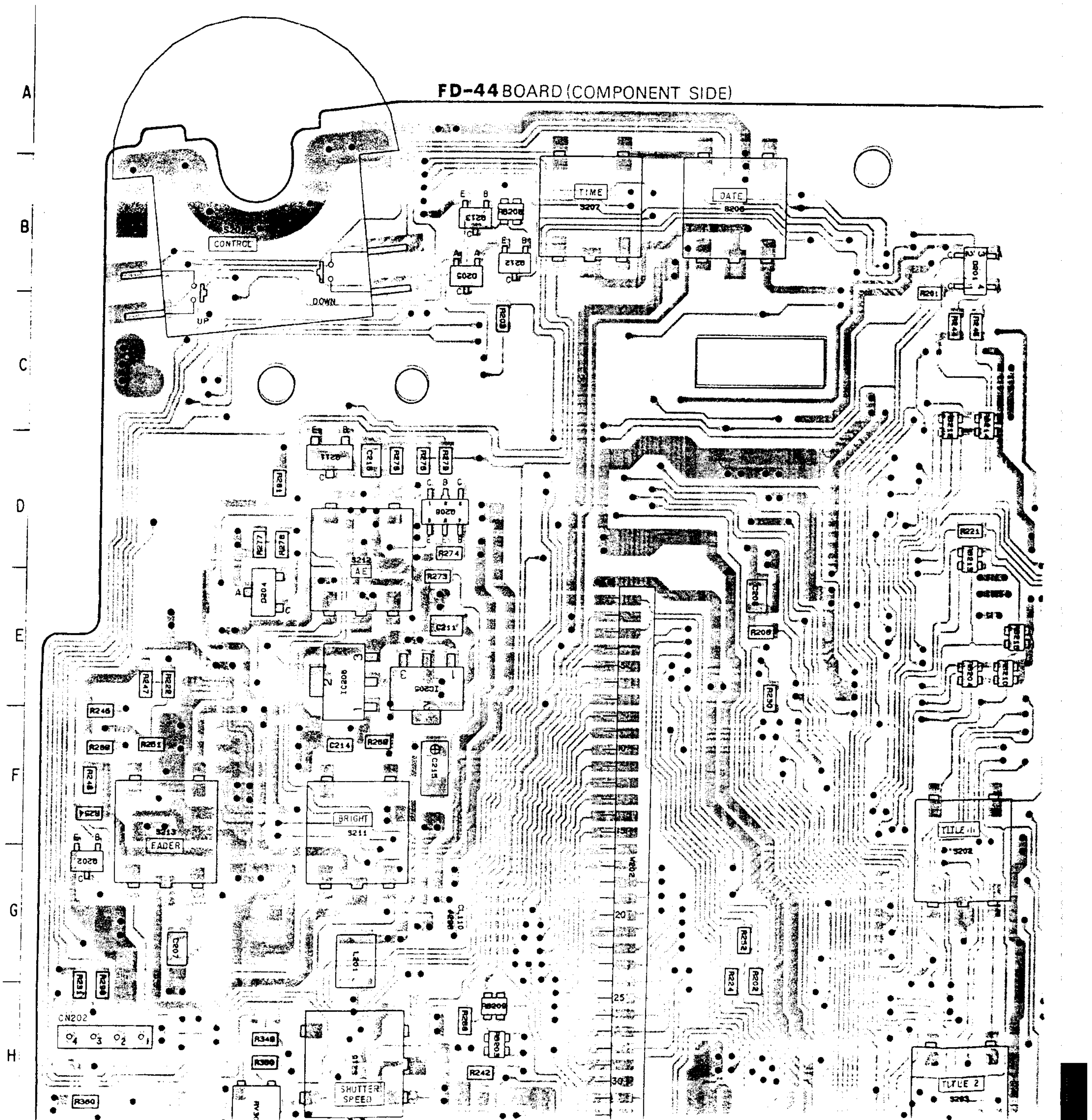
Email:- enquiries@mauritron.co.uk

FD-44 (MODE CONTROL, CHARACTOR GENERATOR), FK-47 (FUNCTION SWITCH), FA-2 (FOCUS SWITCH), LI-

—Ref. No. FD-44 BOARD : 4000 series, FK-47, FA-2, LI-33, FP-376 BOARDS : 5000 series—


FD-44 BOARD (COMPONENT SIDE)
A
B
C
D
E
F
G
H
CONTROL
UP
DOWN
TIME
S207
DATE
S206
AE
S212
BRIGHT
S211
FADER
S213
TITLE
S202
TITLE 2
SHUTTER SPEED
CN202
D201
D202
D203
D204
D205
R201
R203
R208
R209
R221
R222
R224
R242
R246
R247
R248
R254
R259
R261
R273
R274
R277
R278
R280
R281
R346
R360
C207
C211
C214
C215
C216
IC205
IC206
L301
20
25
30

< DIODE >

D201	8-719-940-45	DWA010
D202	8-719-404-46	MA110
D203	· 8-719-938-72	SB01-05CP
D204	8-719-420-36	MA151A
D205	8-719-941-86	DAN202U
D213	8-719-404-46	MA110
D301	8-719-404-46	MA110

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IC201	8-759-153-53	uPD75316GF-117-3B9
IC202	8-759-999-02	TL1596CD
IC203	8-759-145-63	uPD7564G-540
IC205	8-759-937-54	S-81250HG-RD-S
IC206	8-759-937-56	S-8054ALB-LM-S
IC301	8-759-998-30	CF79028PG
IC302	8-752-326-23	CXK58257M-10L
IC303	8-752-039-49	CXA1393AN
IC304	8-759-634-47	M51285BGP

< TRANSISTOR >

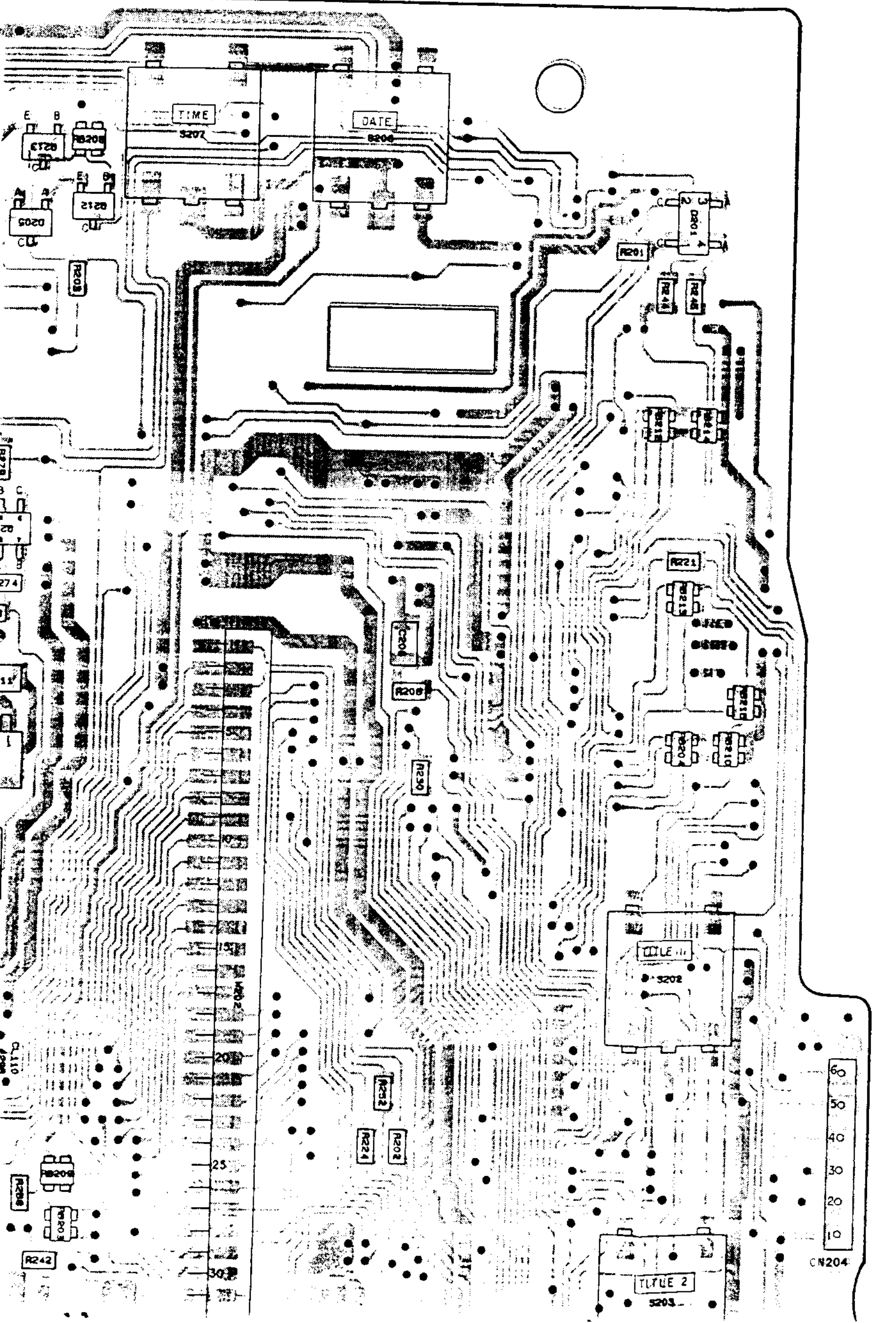
Q201	8-729-904-20	FMA2
Q202	8-729-905-18	DTC144EU
Q203	8-729-905-24	2SA1576-S
Q204	8-729-905-15	DTC144WU
Q205	· 8-729-109-44	2SK94
Q206	8-729-402-78	XN6401
Q207	8-729-402-19	XN6501
Q208	8-729-402-78	XN6401
Q209	8-729-403-10	XN6215
Q210	8-729-905-XX	DTC114TU
Q211	8-729-100-66	2SC1623
Q212	8-729-905-XX	DTC114TU
Q213	8-729-905-18	DTC144EU
Q214	8-729-905-12	DTA144EU
Q301	8-729-925-91	DTC115EU

Q311	8-72
Q312	8-72
Q313	8-72
Q314	8-72
Q315	8-72
Q317	8-72
Q318	8-72
Q319	8-72

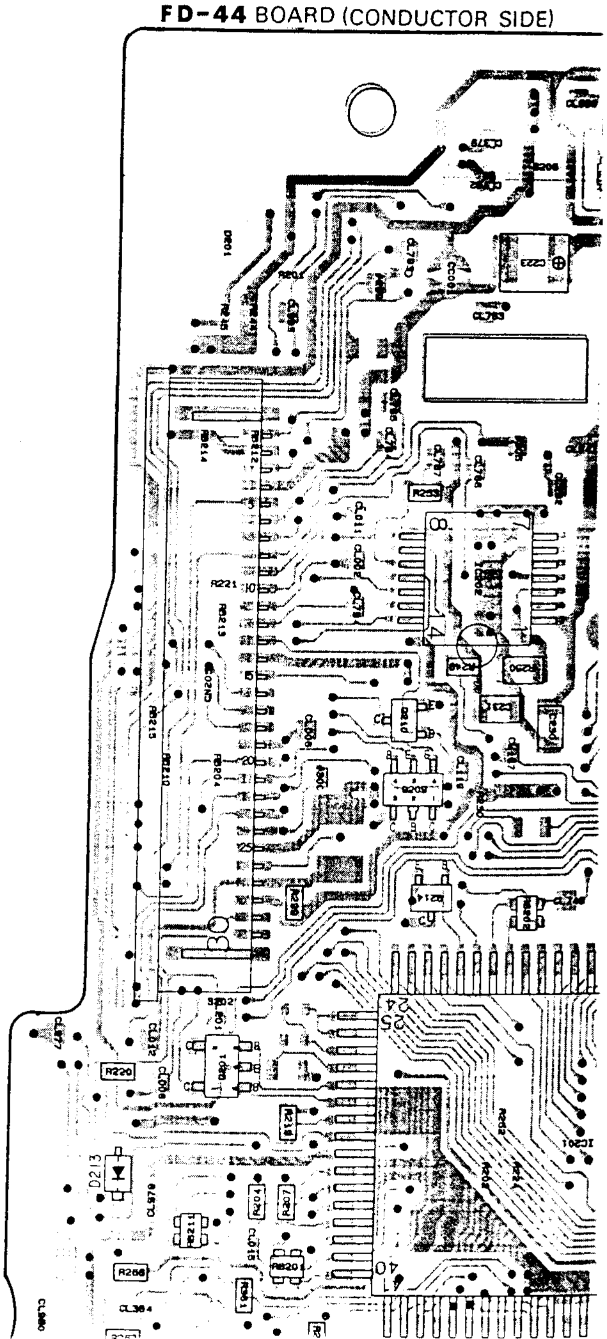
ENERATOR), FK-47 (FUNCTION SWITCH), FA-2 (FOCUS SWITCH), LI-33 (LITHIUM BATTERY HOLDER), FP-376 (REMOTE COMMAND RE

7, FA-2, LI-33, FP-376 BOARDS : 5000 series—

FD-44 BOARD (COMPONENT SIDE)



FD-44 BOARD (CONDUCTOR SIDE)

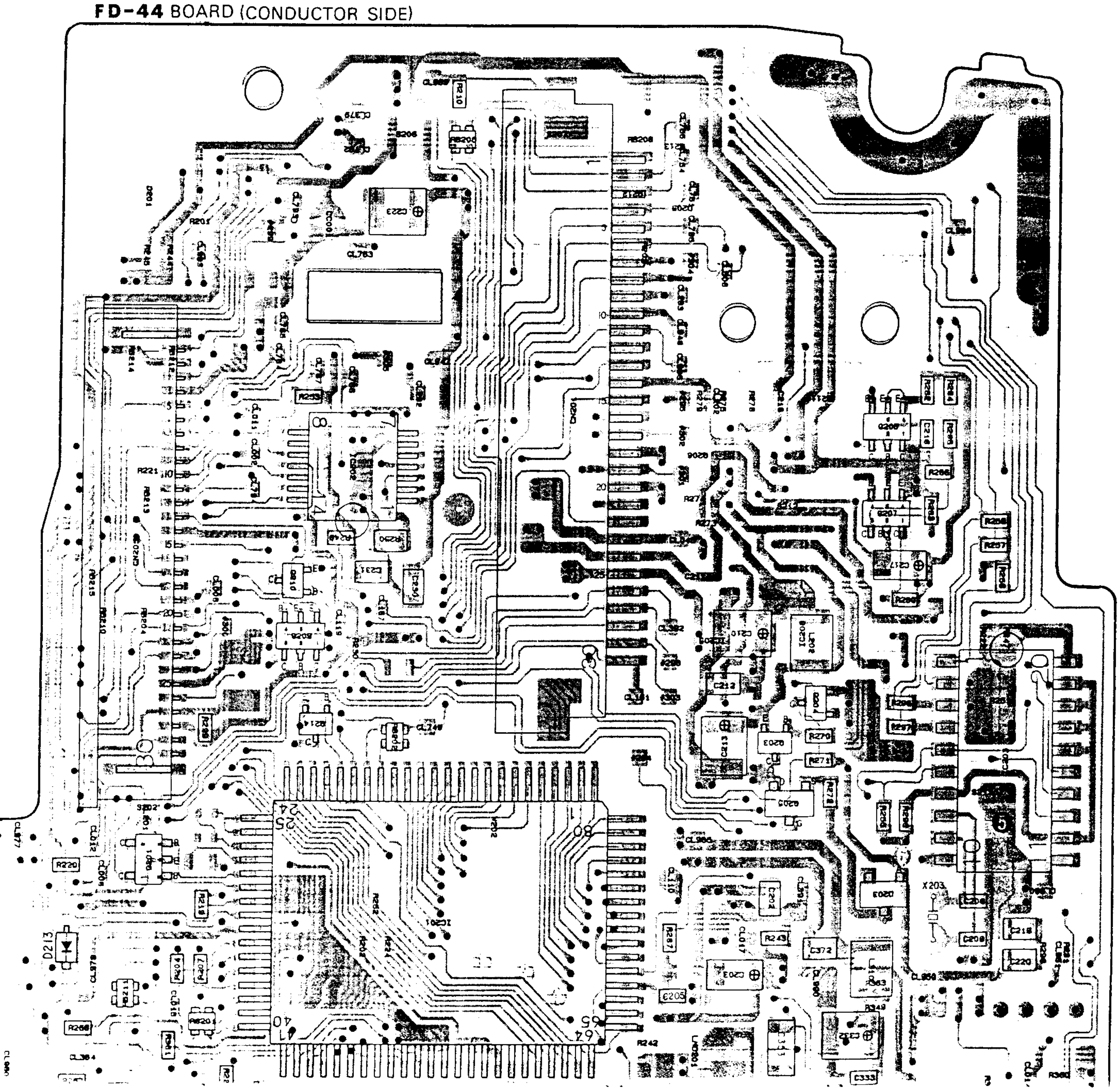


< TRANSISTOR >

Q201	8-729-904-20	FMA2
Q202	8-729-905-18	DTC144EU
Q203	8-729-905-24	2SA1576-S
Q204	8-729-905-15	DTC144WU
Q205	8-729-109-44	2SK94
Q206	8-729-402-78	XN6401
Q207	8-729-402-19	XN6501
Q208	8-729-402-78	XN6401
Q209	8-729-403-10	XN6215
Q210	8-729-905-XX	DTC114TU
Q211	8-729-100-66	2SC1623
Q212	8-729-905-XX	DTC114TU
Q213	8-729-905-18	DTC144EU
Q214	8-729-905-12	DTA144EU
Q301	8-729-925-91	DTC115EU
Q311	8-729-905-35	2SC4081-R
Q312	8-729-905-35	2SC4081-R
Q313	8-729-905-18	DTC144EU
Q314	8-729-905-35	2SC4081-R
Q315	8-729-905-18	DTC144EU
Q317	8-729-905-24	2SA1576-S
Q318	8-729-905-24	2SA1576-S
Q319	8-729-905-35	2SC4081-S

TERY HOLDER), FP-376 (REMOTE COMMAND RECIEVER, REC SWITCH) PRINTED WIRING BOARDS

FD-44 BOARD (CONDUCTOR SIDE)



R310
C223
CL763
R201
R221
R213
R214
R220
R218
R268
D213
D201
C212
C213
C210
C217
C218
C220
C205
C206
C208
C372
C333
R206
R207
R208
R242
R243
R270
R271
R272
R287
R297
R349
R360
IC201
Q203
Q206
Q207
X203
CL117
CL304
CL385
1
24
25
40
41
64
65
80

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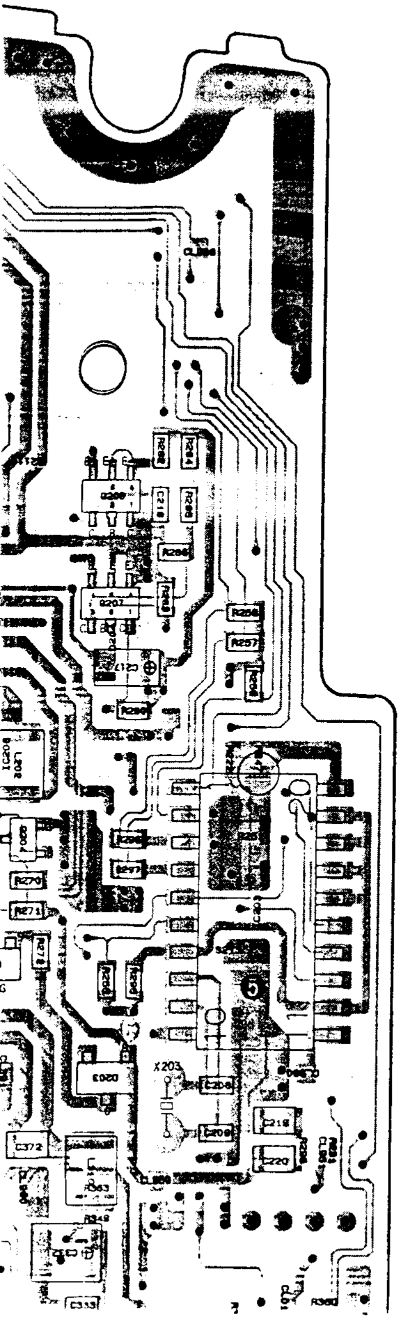
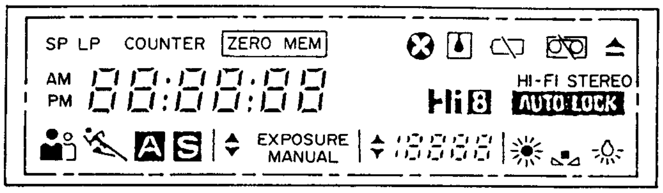
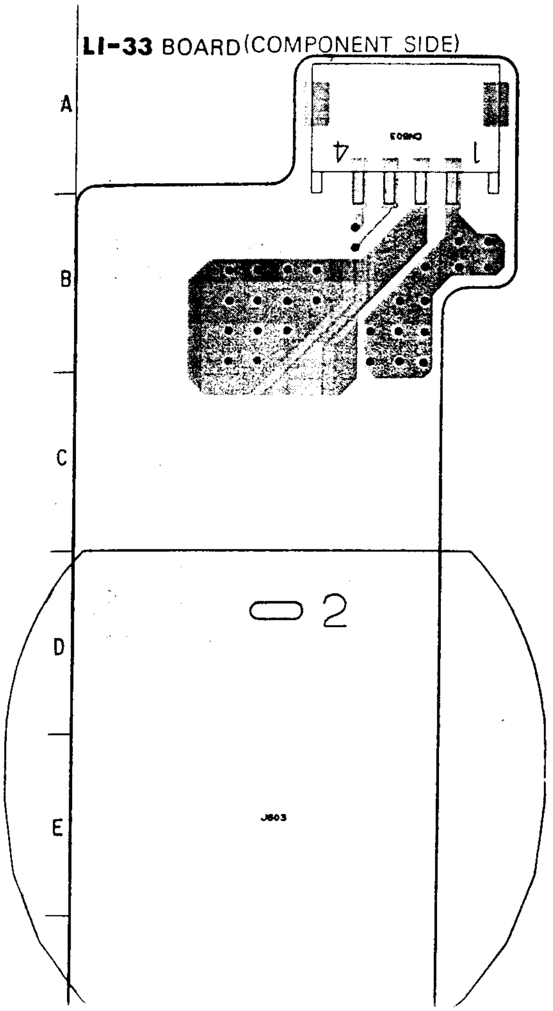
BOARDS

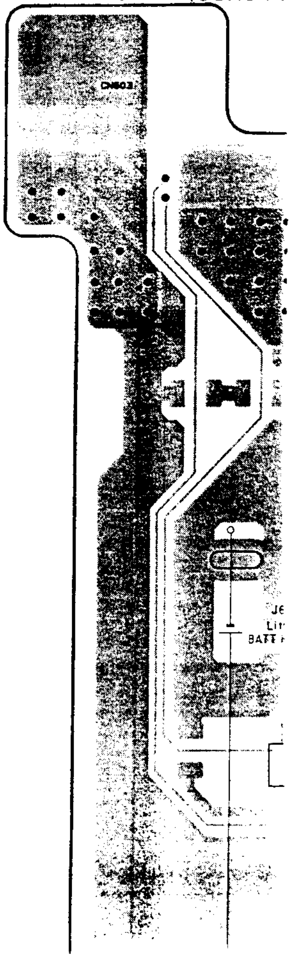

R256
R257
C218
C220
C372
X203
R270
R271


SP LP
COUNTER
ZERO MEM
AM
PM
88:88:88
HI-FI STEREO
Hi8
AUTO LOCK
A
S
EXPOSURE
MANUAL
8888

LI-33 BOARD (COMPONENT SIDE)


A
B
C
D
E
CN603
4
1
2
J603

LI-33 BOARD (CONDUC



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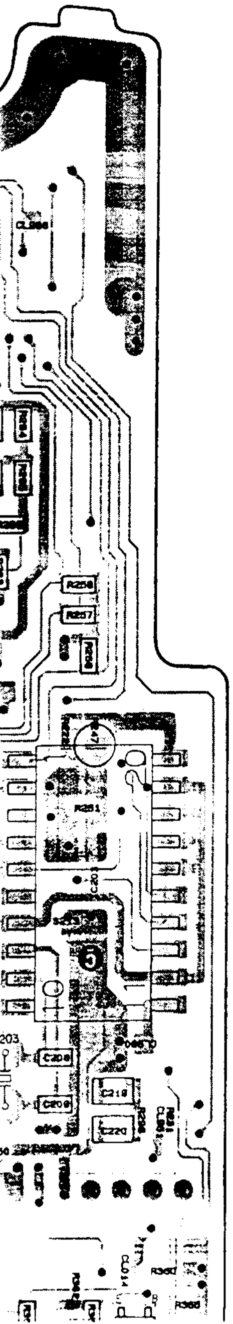
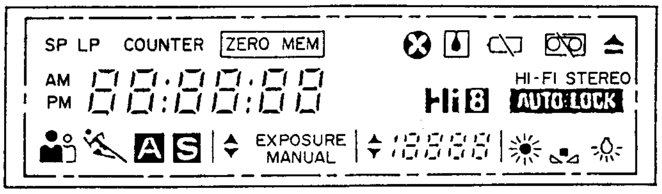
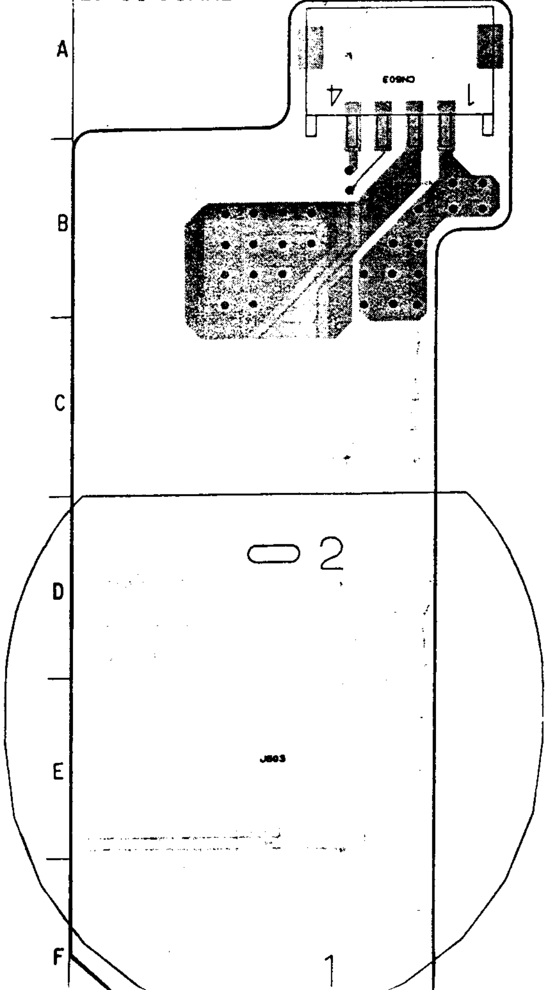
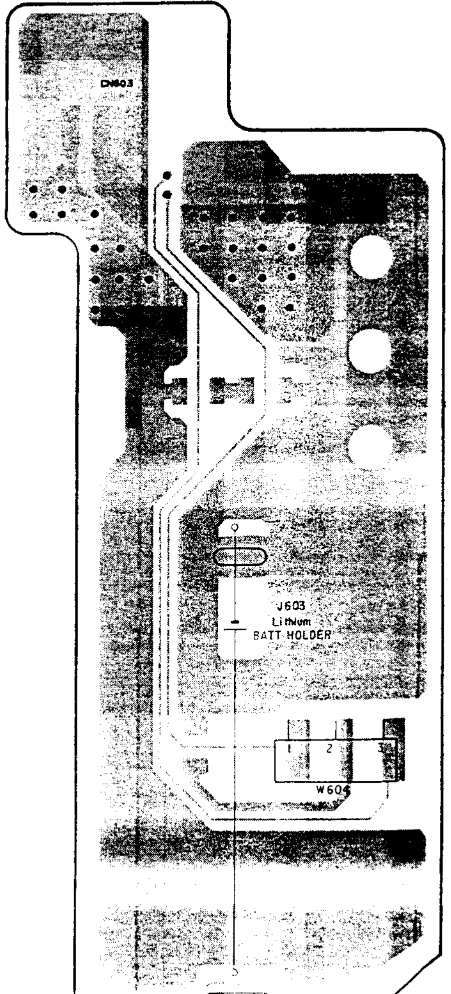

R258
R257
R251
C208
C219
C220
R360

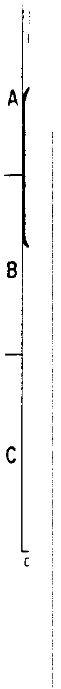

SP LP
COUNTER
ZERO MEM
AM
PM
HI-FI STEREO
Hi8
AUTO LOCK
EXPOSURE
MANUAL

LI-33 BOARD (COMPONENT SIDE)

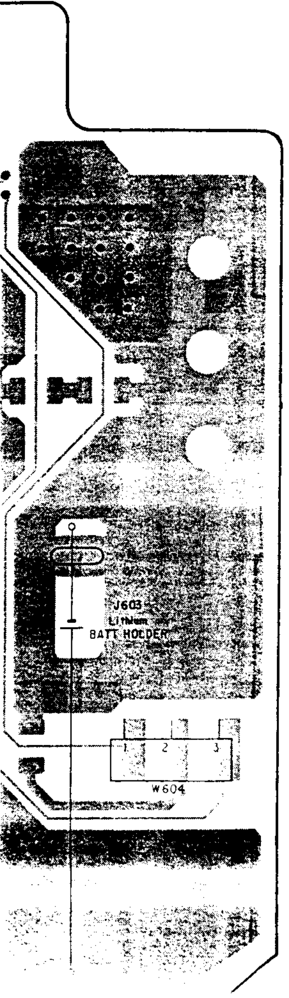

A
B
C
D
E
F
CN603
4
1
2
J603
1

LI-33 BOARD (CONDUCTOR SIDE)

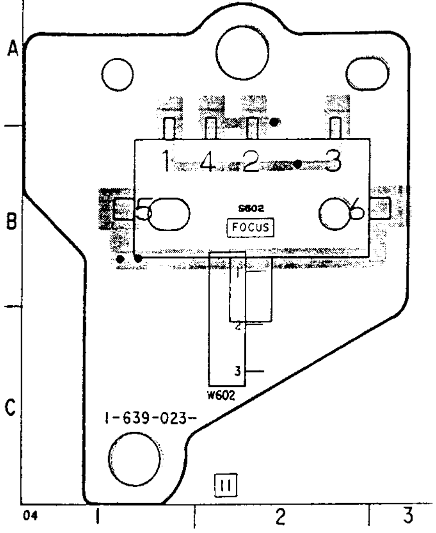

CN603
J603
Lithium
BATT HOLDER
1
2
3
W604

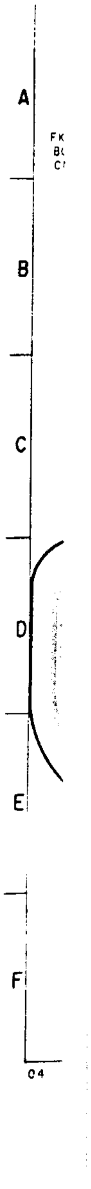


D (CONDUCTOR SIDE)


J603
Lithium
BATT HOLDER
1
2
3
W604

FA-2 BOARD (COMPONENT SIDE)


A
B
C
1
4
2
3
5
6
S602
FOCUS
1
2
3
W602
1-639-023-
11
04
1
2
3



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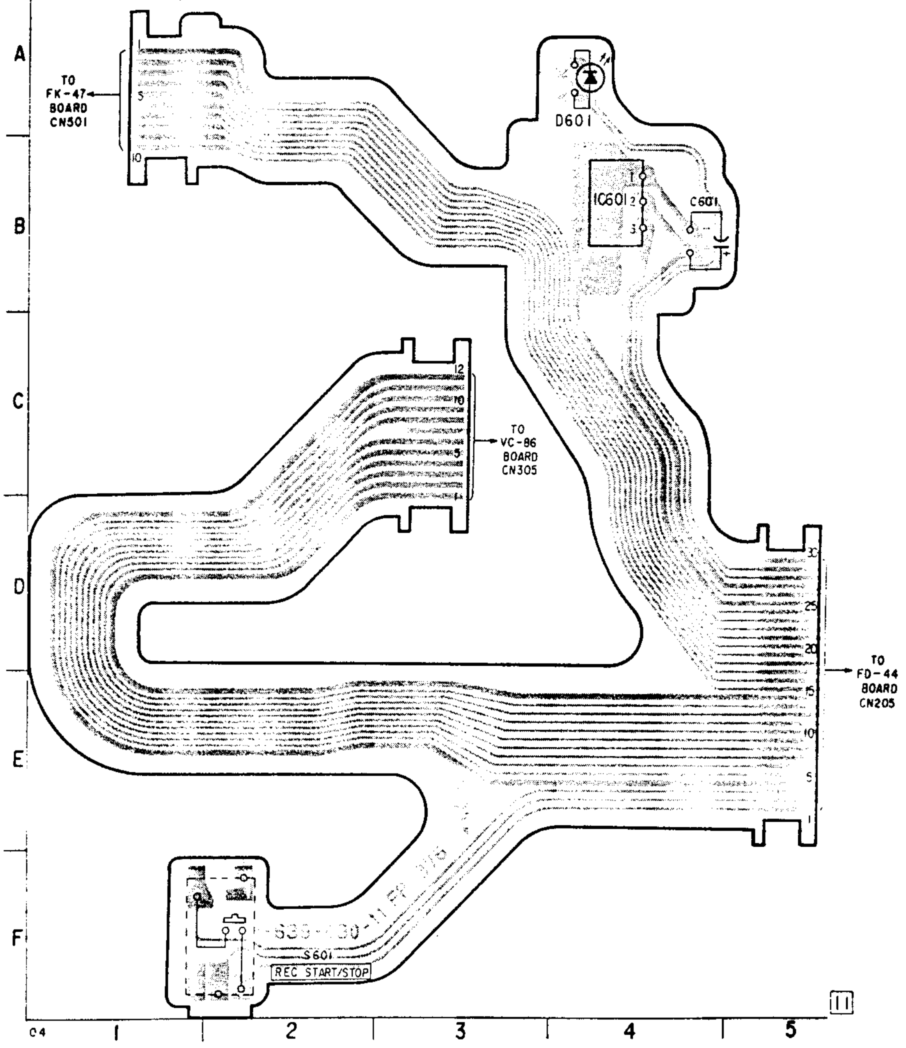
< DIODE >

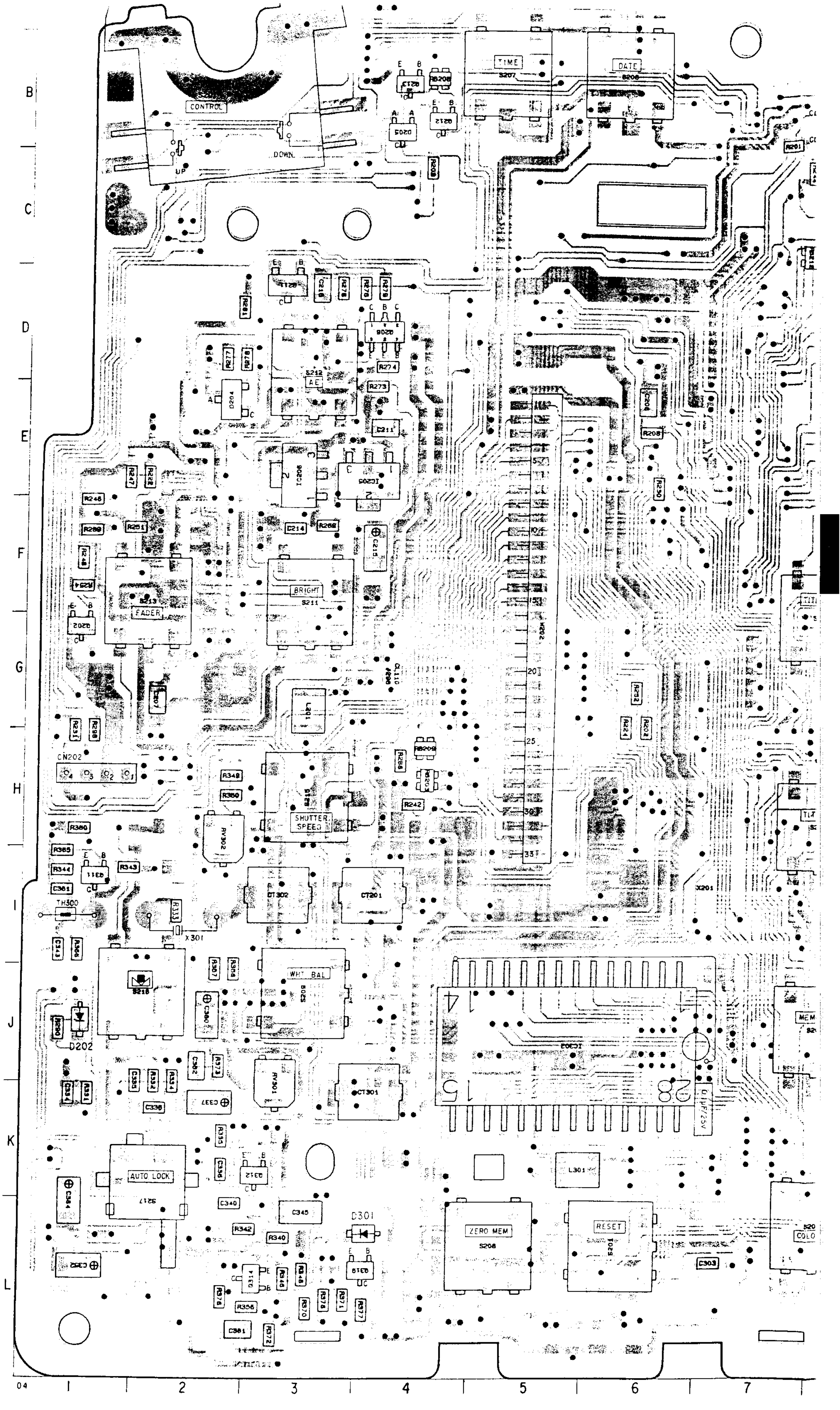
D601	8-719-812-41	TLR124. RED

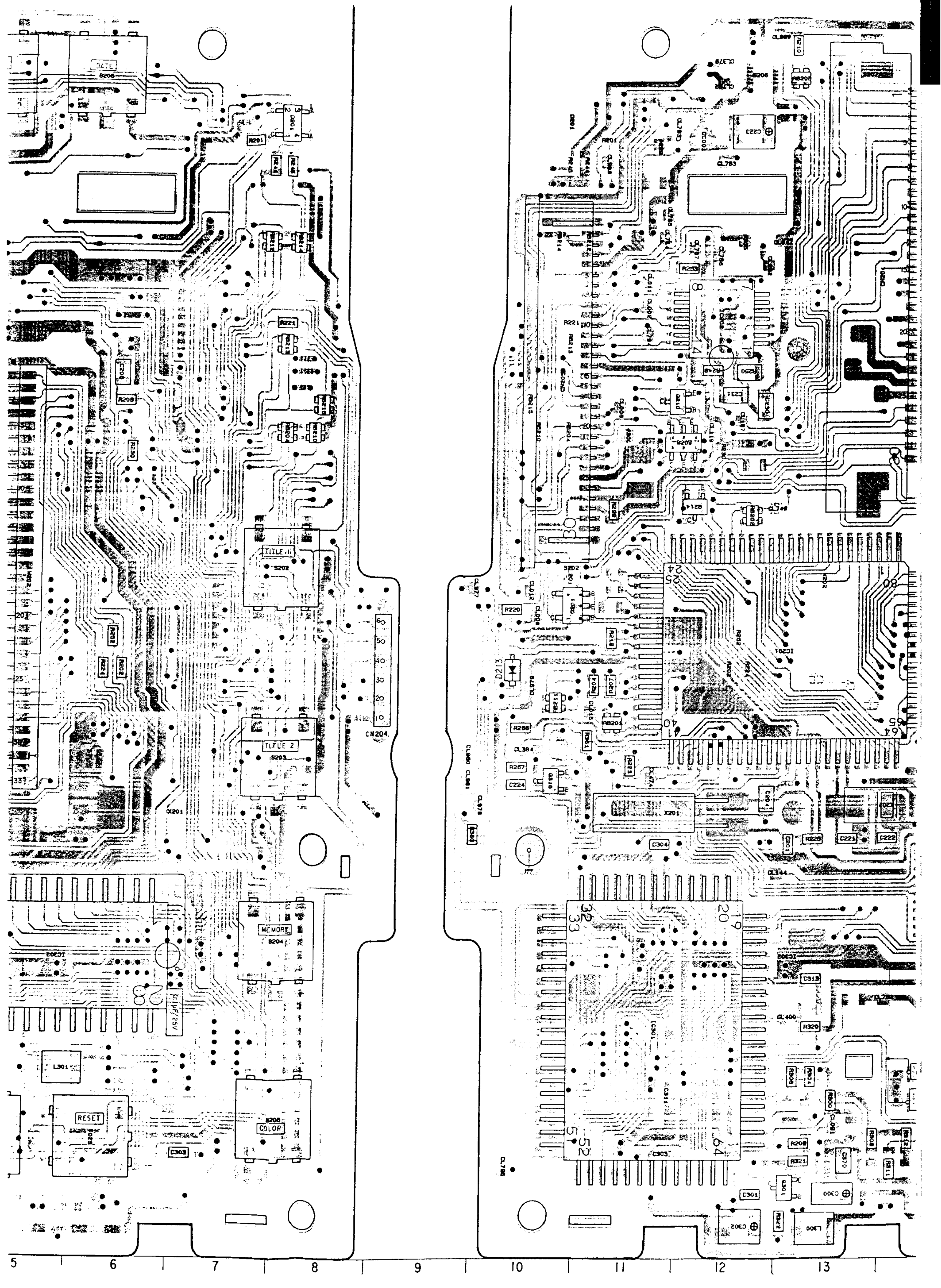
< IC >

IC601	8-741-100-63	SBX1619-51

FP-376 FLEXIBLE BOARD


A
B
C
D
E
F
TO FK-47 BOARD CN501
5
10
D601
IC601
1
2
3
C601
12
10
5
TO VC-86 BOARD CN305
30
25
20
15
10
5
1
TO FD-44 BOARD CN205
S601
REC START/STOP
C4
1
2
3
4
5


B
C
D
E
F
G
H
I
J
K
L
04
1
2
3
4
5
6
7
CONTROL
UP
DOWN
TIME
S207
DATE
S206
E B
C128
RB208
D205
Q212
R209
R201
Q210
C218
R278
R276
R279
R281
Q206
R277
R278
AE
S212
R274
R273
D204
C211
R204
R208
IC208
IC205
R230
R247
R282
R246
R289
R251
D214
R268
C215
R248
R254
FADER
S213
BRIGHT
S211
Q202
IC202
20
25
30
33
D207
L401
R232
R224
R202
R231
R296
CN202
RB209
R286
RB205
R348
R350
SHUTTER SPEED
S215
R242
R380
RV302
R365
R344
Q311
R343
C361
CT302
CT201
X201
TH300
R333
X301
C343
R366
S216
R307
R316
WHT BAL
S209
C360
D202
R390
IC203
C302
R373
C335
R332
R334
RV301
C334
R331
C336
C337
CT301
4
1
15
28
0.1μF/25V
R335
C338
Q312
AUTO LOCK
S217
L301
C364
C340
C345
D301
ZERO MEM
S208
RESET
S201
R342
R340
C303
C352
Q314
R346
R348
Q313
R374
R356
R370
R378
R371
R377
C381
R372
TIT
MEM
COLO


DATE
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D201
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R244
R246
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R215
R204
R210
R206
R208
R230
R202
R224
TITLE 1
S202
TITLE 2
S203
CN204
X201
MEMORY
S204
IC303
L301
RESET
COLOR
S208
C303
C223
CL783
R233
IC205
R248
C231
Q210
Q209
Q214
IC201
25
24
80
40
41
64
65
D213
R220
R219
R288
R267
C224
Q216
CL384
R223
X201
C304
C201
R225
C221
C222
IC301
32
33
20
19
51
52
64
C313
CL400
R320
C311
C303
C301
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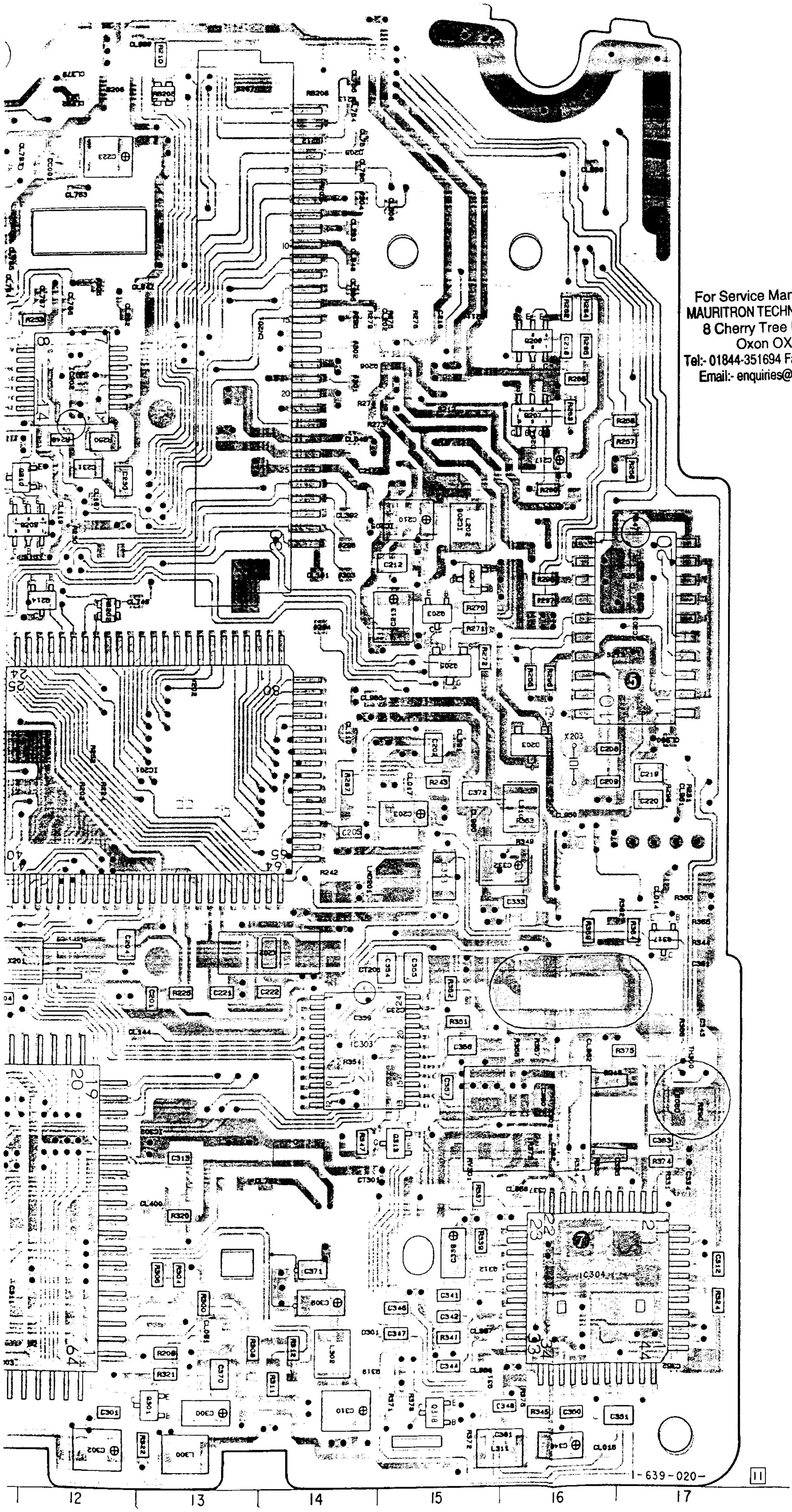
1-639-020-
11
12
13
14
15
16
17
IC201
IC303
IC304

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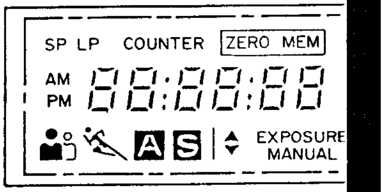
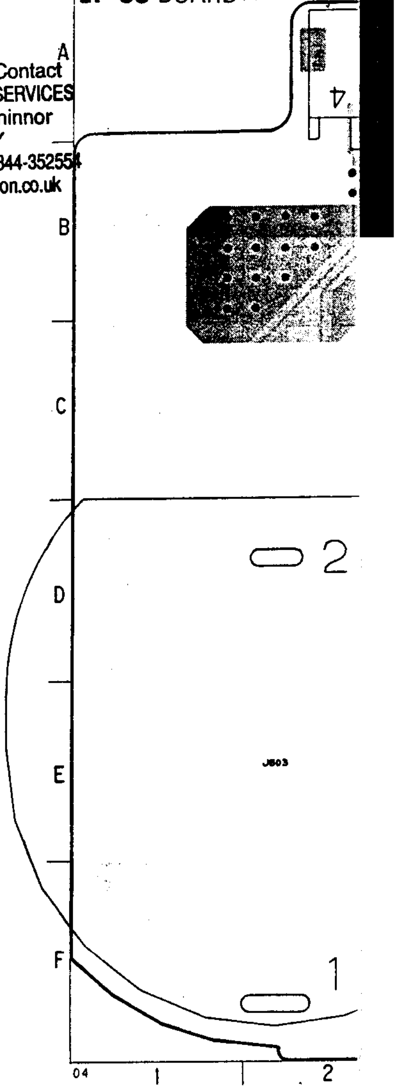
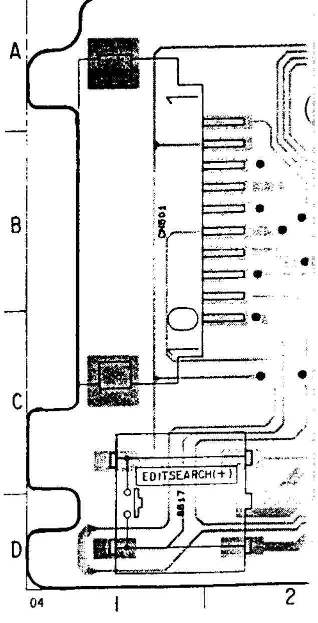
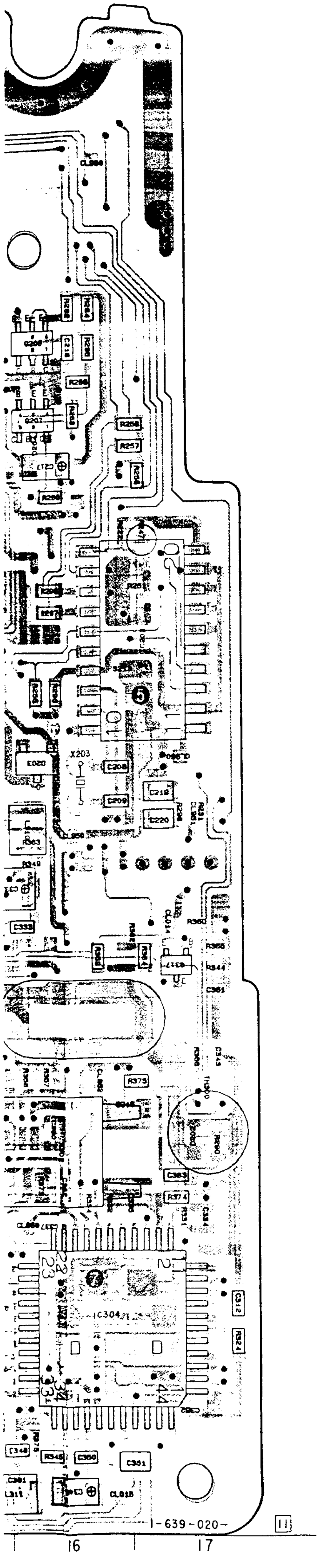

SP LP
COUNTER
ZERO MEM
AM
PM
88:88:88
A
S
EXPOSURE
MANUAL

LI-33 BOARD (COMPONE


A
B
C
D
E
F
2
1
04
1
2

FK-47 BOARD (CO


A
B
C
D
1
EDITSEARCH(+)
04
1
2


R258
R257
R256
R296
R297
X203
C208
C209
C219
C220
E020
C333
R375
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IC304
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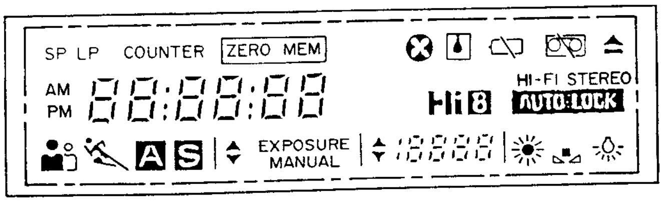
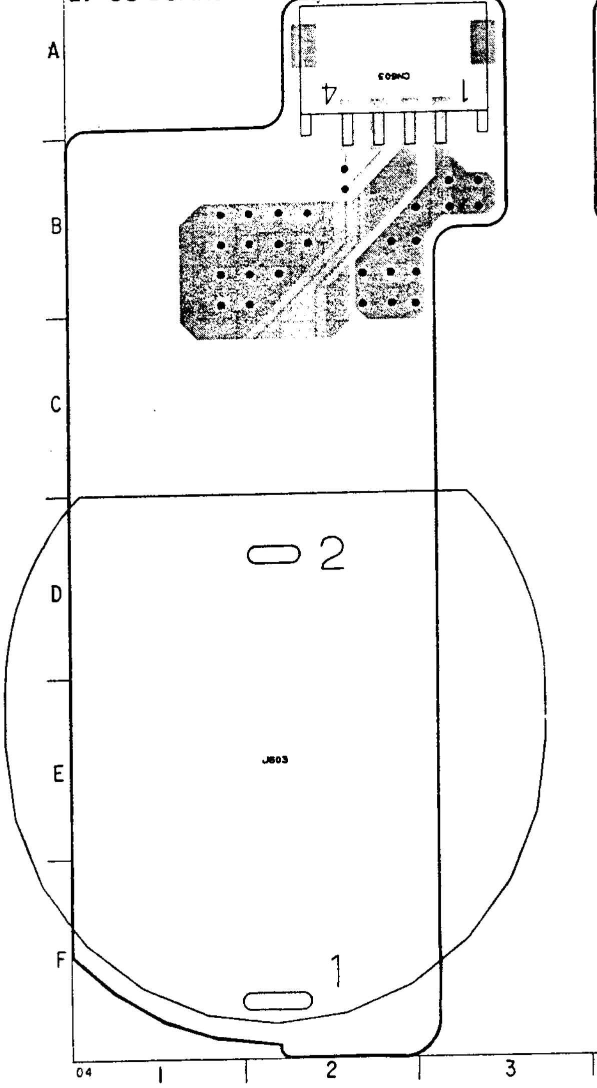
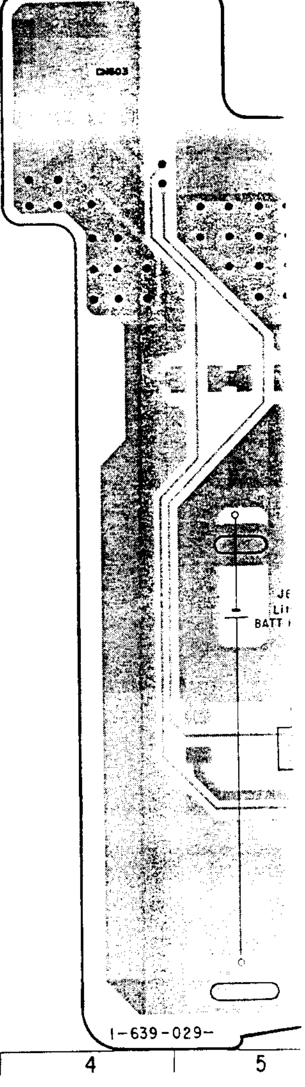
R324
C348
C360
C361
CL015
1-639-020-
11
16
17


SP LP
COUNTER
ZERO MEM
AM
PM
HI-FI STEREO
Hi8
AUTO LOCK
A
S
EXPOSURE
MANUAL

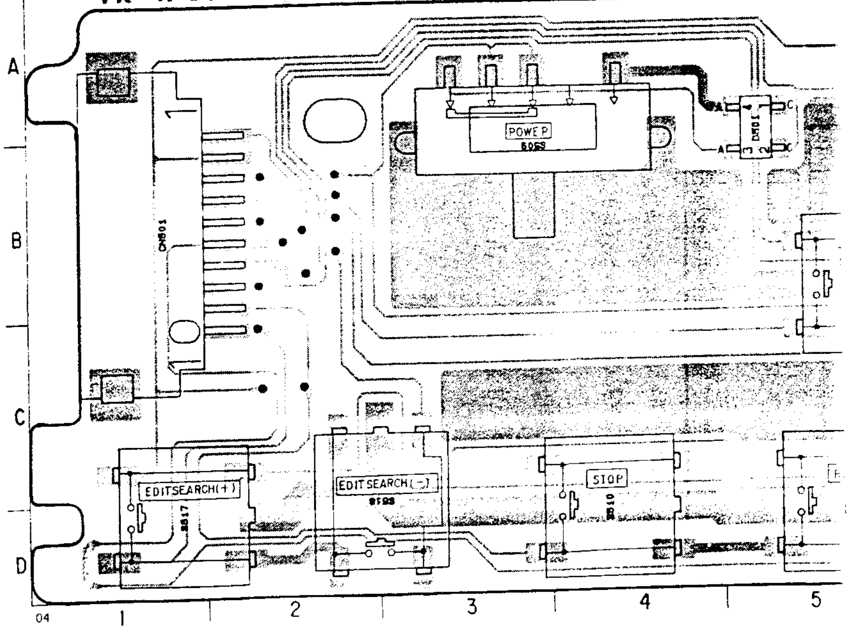
LI-33 BOARD (COMPONENT SIDE)

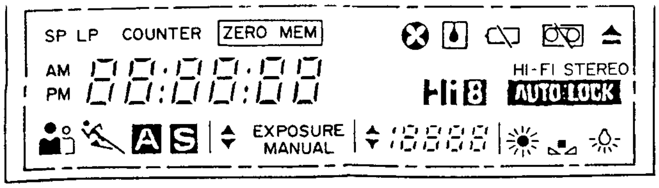

A
B
C
D
E
F
CN603
4
1
2
J603
1
04
1
2
3

LI-33 BOARD (CONDUC

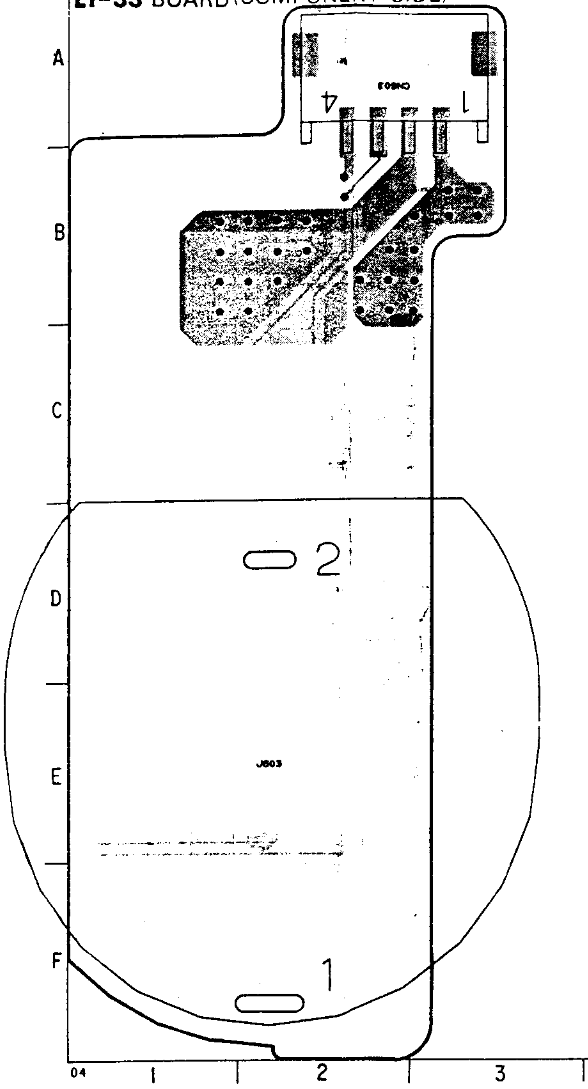

CN603
BATT
1-639-029-
4
5

FK-47 BOARD (COMPONENT SIDE)

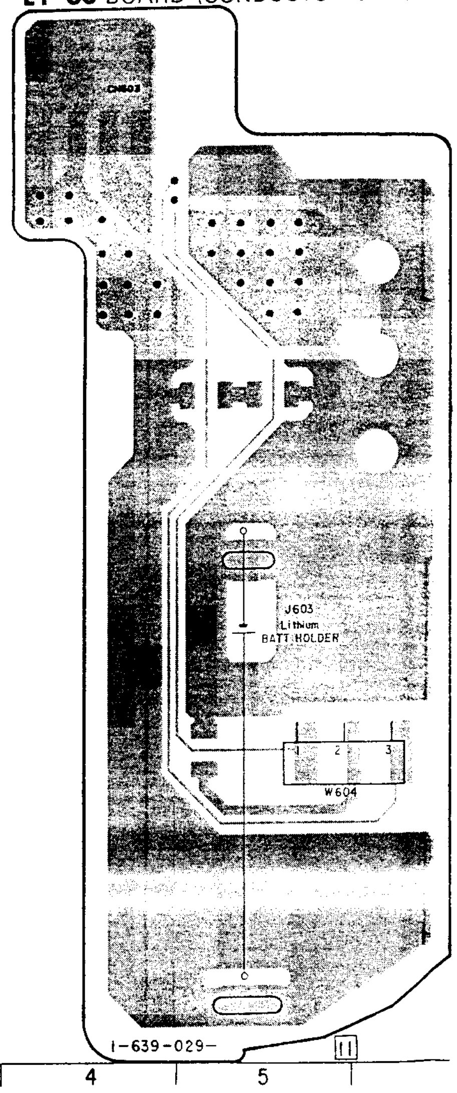

A
B
C
D
1
CN601
POWER
D601
EDITSEARCH(+)
EDIT SEARCH(-)
STOP
04
1
2
3
4
5


SP LP COUNTER ZERO MEM
AM
PM
HI-FI STEREO
Hi8
AUTO LOCK
EXPOSURE MANUAL
A S

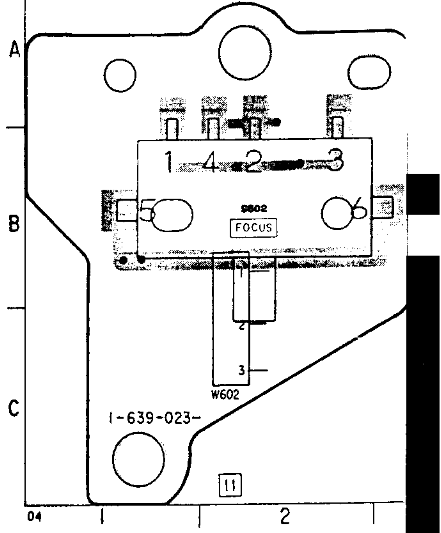
LI-33 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
CN603
4
1
2
1
J603
04
1
2
3

LI-33 BOARD (CONDUCTOR SIDE)


CN603
J603
Lithium
BATT HOLDER
1
2
3
W604
1-639-029-
11
4
5

FA-2 BOARD
(COMPONENT SIDE)


A
B
C
1
4
2
3
5
6
S602
FOCUS
2
3
W602
1-639-023-
11
04
1
2

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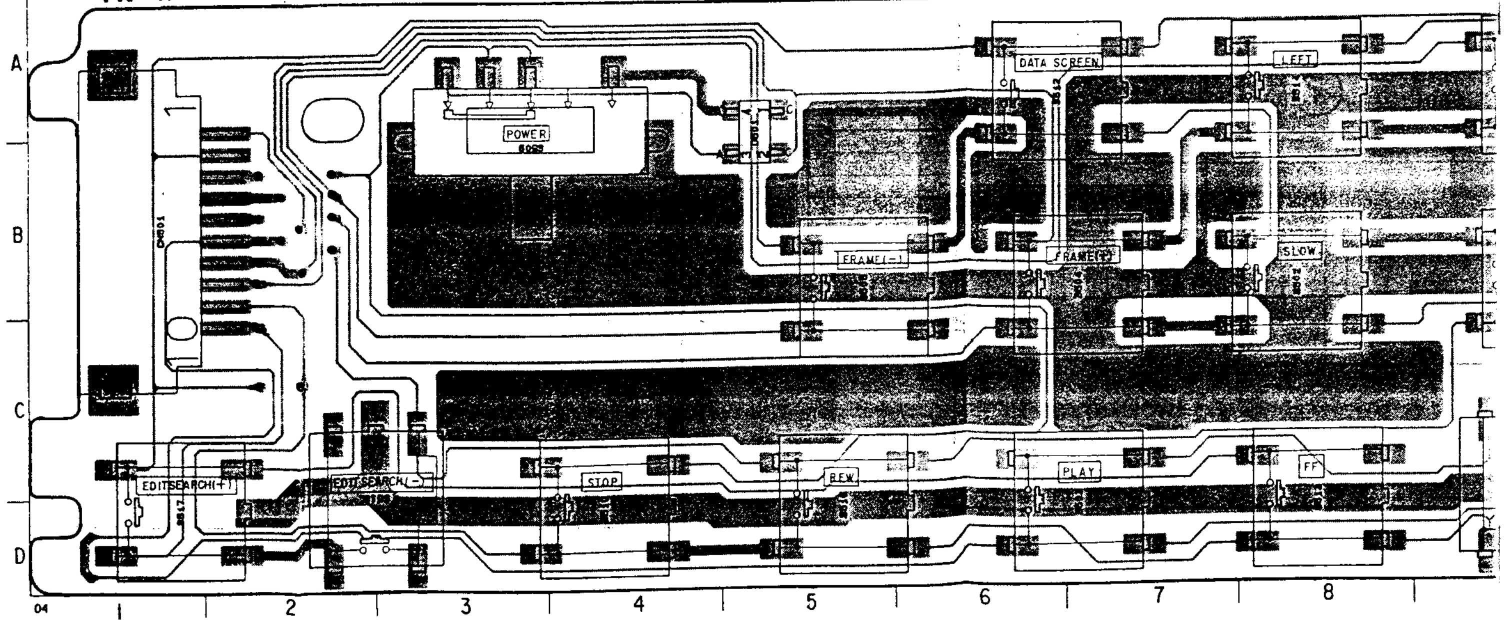
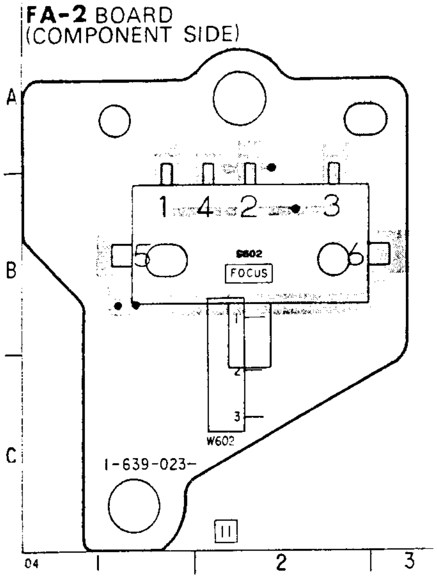
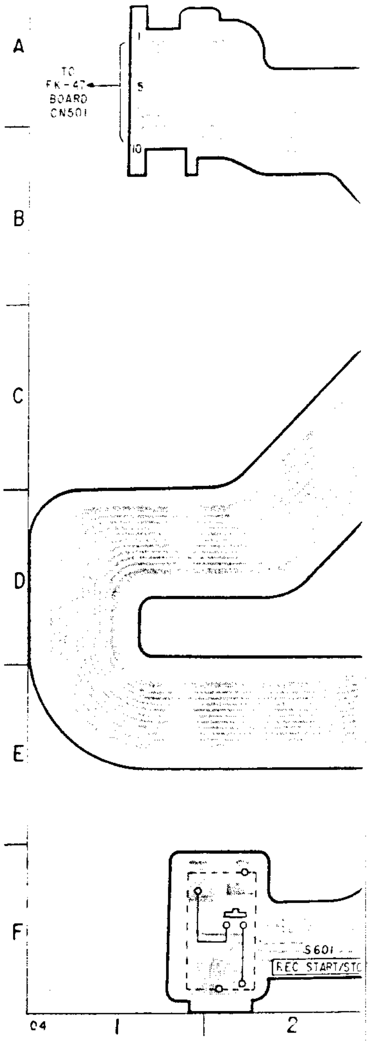
< DIODE
D501

FK-47 BOARD (COMPONENT SIDE)

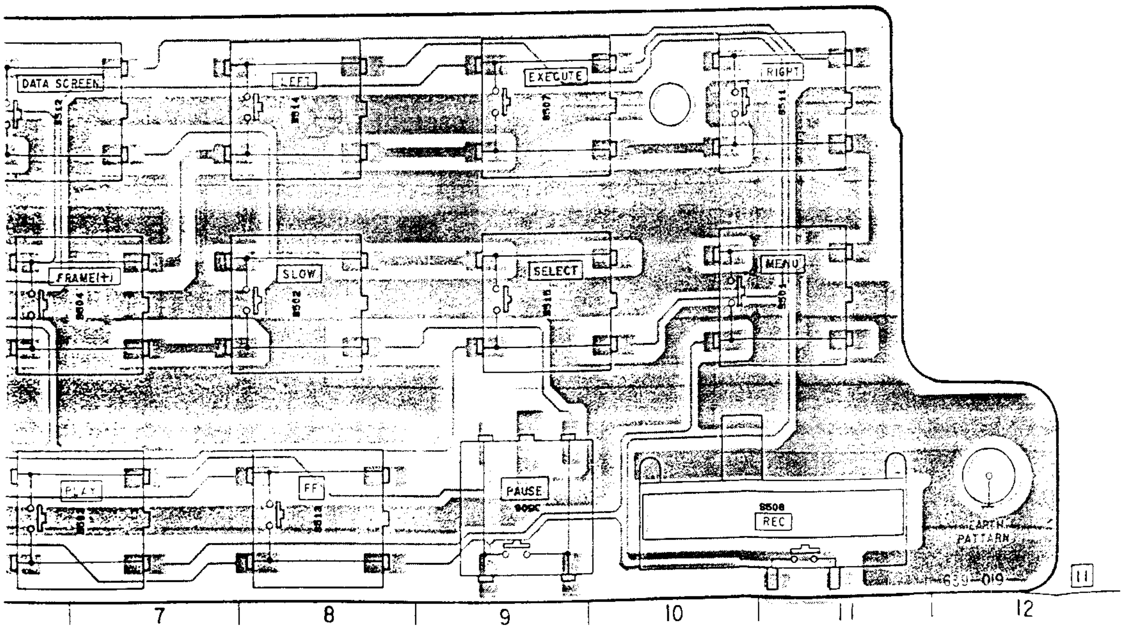

A
B
C
D
CN501
1
POWER
S605
DATA SCREEN
LEFT
FRAME(-)
FRAME(+)
SLOW
EDIT SEARCH(+)
EDIT SEARCH(-)
STOP
REW
PLAY
FF
04
1
2
3
4
5
6
7
8

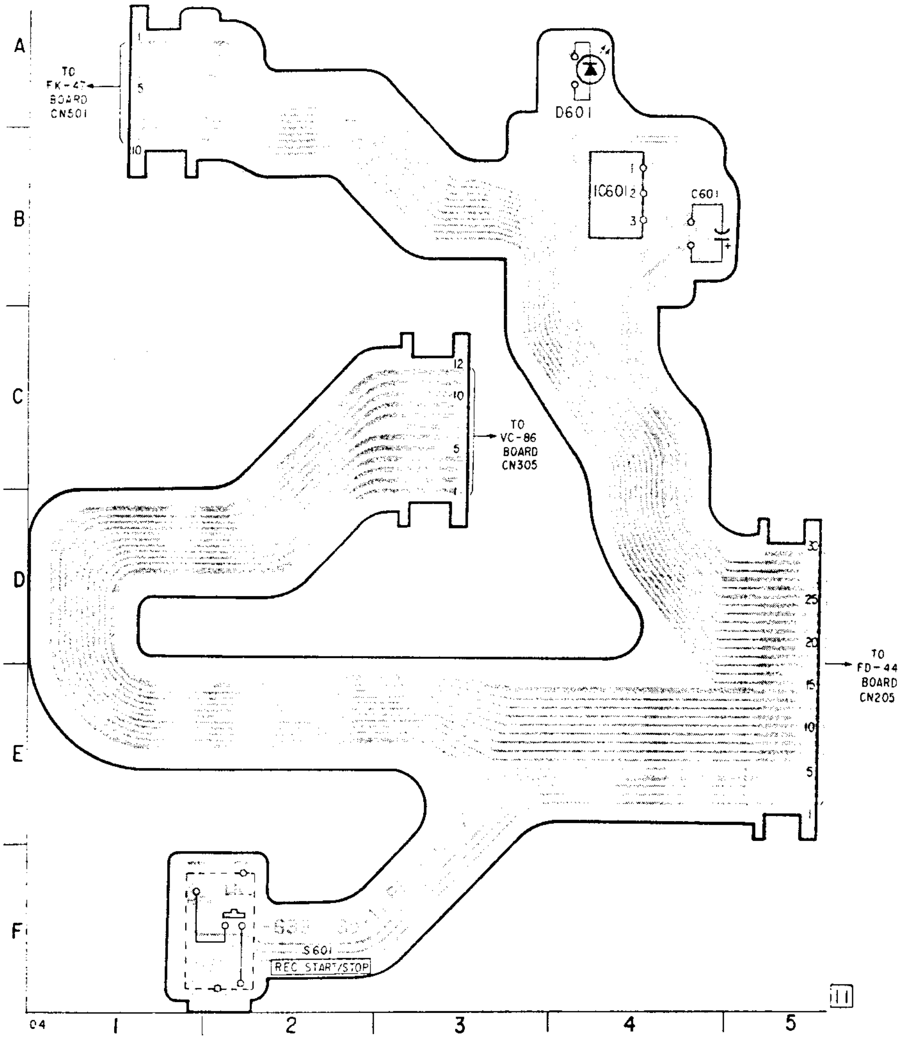
FA-2 BOARD
(COMPONENT SIDE)


A
B
C
1
4
2
3
5
6
S602
FOCUS
W602
1-639-023-
11
04
1
2
3


A
TO
FK-47
BOARD
CN501
1
5
10
B
C
D
E
F
S601
REC START/STO
04
1
2

< DIODE >
D501 8-719-940-45 DWA010


DATA SCREEN
S512
LEFT
S514
EXECUTE
S507
RIGHT
S511
FRAME(+)
S504
SLOW
S502
SELECT
S515
MENU
S505
PLAY
S503
FF
S513
PAUSE
S506
REC
S508
EARTH
PATTERN
1-639-019
11
7
8
9
10
11
12


A
B
C
D
E
F
TO FK-47 BOARD CN501
1
5
10
D601
IC601
1
2
3
C601
12
10
5
TO VC-86 BOARD CN305
30
25
20
15
10
5
1
TO FD-44 BOARD CN205
S601
REC START/STOP
11
1
2
3
4
5

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MAURITRON TECHNICAL SERVICES
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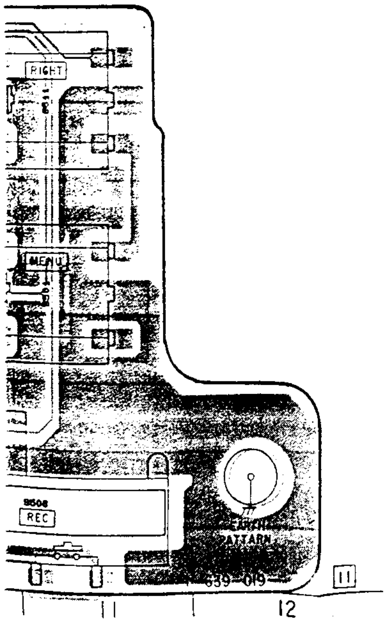
RIGHT
MENU
REC
PATTERN
11
11
12

AU-99 (AUDIO PROCESS), MC-63 (MIC AMP), SW-168 (CAMERA REC SWITCH) SCHEMATIC DIAGRAM

—Ref. No. AU-99, MC-63, SW-168 BOARDS : 6000 series—

1 2 3 4 5 6 7

A

B

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C

D

VF-

(See page 18

E

F

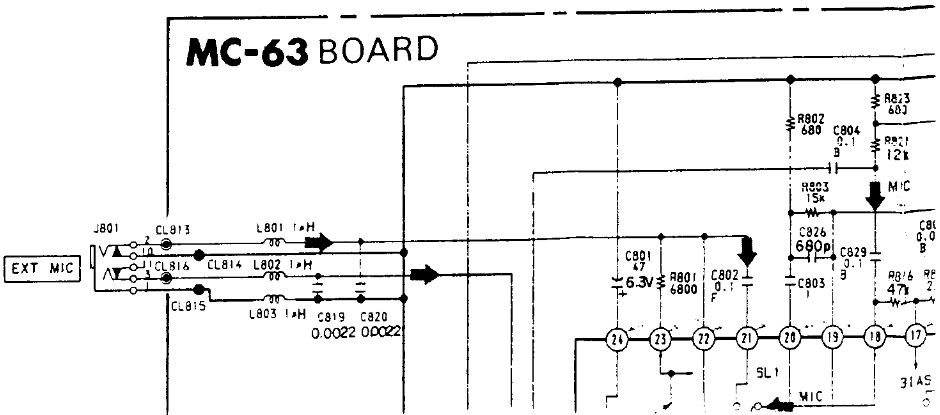
G

H

I

J

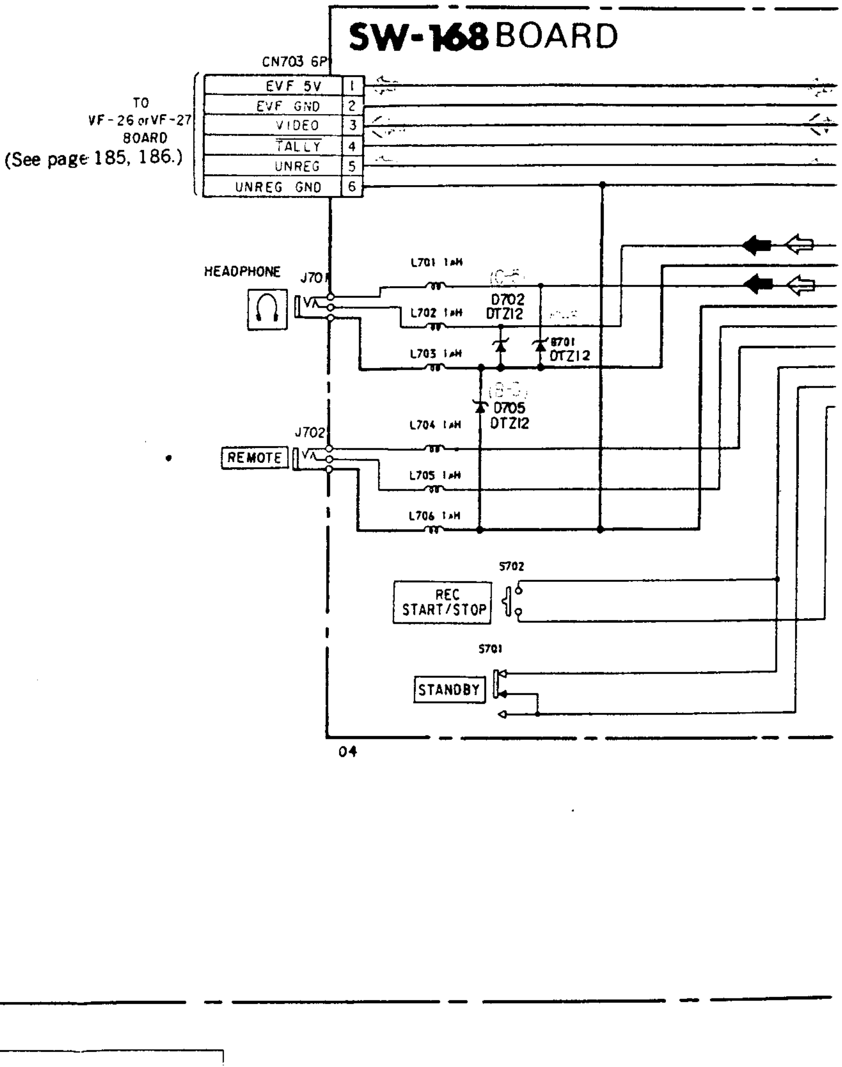
K


MC-63 BOARD
EXT MIC
J801
CL813
CL816
CL814
CL815
L801 1μH
L802 1μH
L803 1μH
C819 0.0022
C820 0.0022
C801 47 6.3V
R801 6800
C802 0.1 F
R802 680
C804 0.1 B
R823 680
R821 12k
R803 15k
MIC
C826 680p
C803 1
C829 0.1 B
R816 47k
SL1
MIC
31AS
24
23
22
21
20
19
18
17

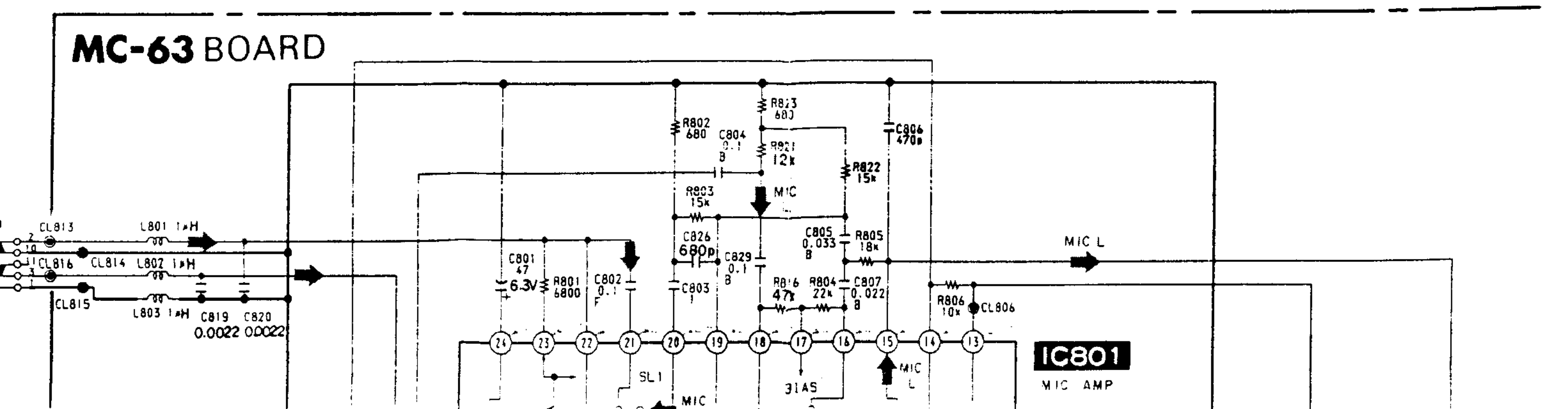
MIC AMP), SW-168 (CAMERA REC SWITCH) SCHEMATIC DIAGRAM

RDS : 6000 series—

3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11



SW-168 BOARD
CN703 6P
EVF 5V 1
EVF GND 2
VIDEO 3
TALLY 4
UNREG 5
UNREG GND 6
TO VF-26 or VF-27 BOARD
(See page 185, 186.)
HEADPHONE
J701
L701 1μH
L702 1μH
L703 1μH
D702 DTZ12
D701 DTZ12
D705 DTZ12
J702
REMOTE
L704 1μH
L705 1μH
L706 1μH
S702
REC START/STOP
S701
STANDBY
04



MC-63 BOARD
CL813
CL816
CL814
CL815
L801 1μH
L802 1μH
L803 1μH
C819 0.0022
C820 0.0022
C801 47 6.3V
R801 6800
C802 0.1 F
R802 680
C804 0.1 B
R823 680
R821 12k
R803 15k
R822 15k
C806 470p
MIC
C826 680p
C829 0.1 B
C803 1
C805 0.033 B
R805 18k
R816 47k
R804 22k
C807 0.022 B
R806 10k
CL806
MIC L
24 23 22 21 20 19 18 17 16 15 14 13
SL1
MIC
31AS
MIC L
IC801
MIC AMP

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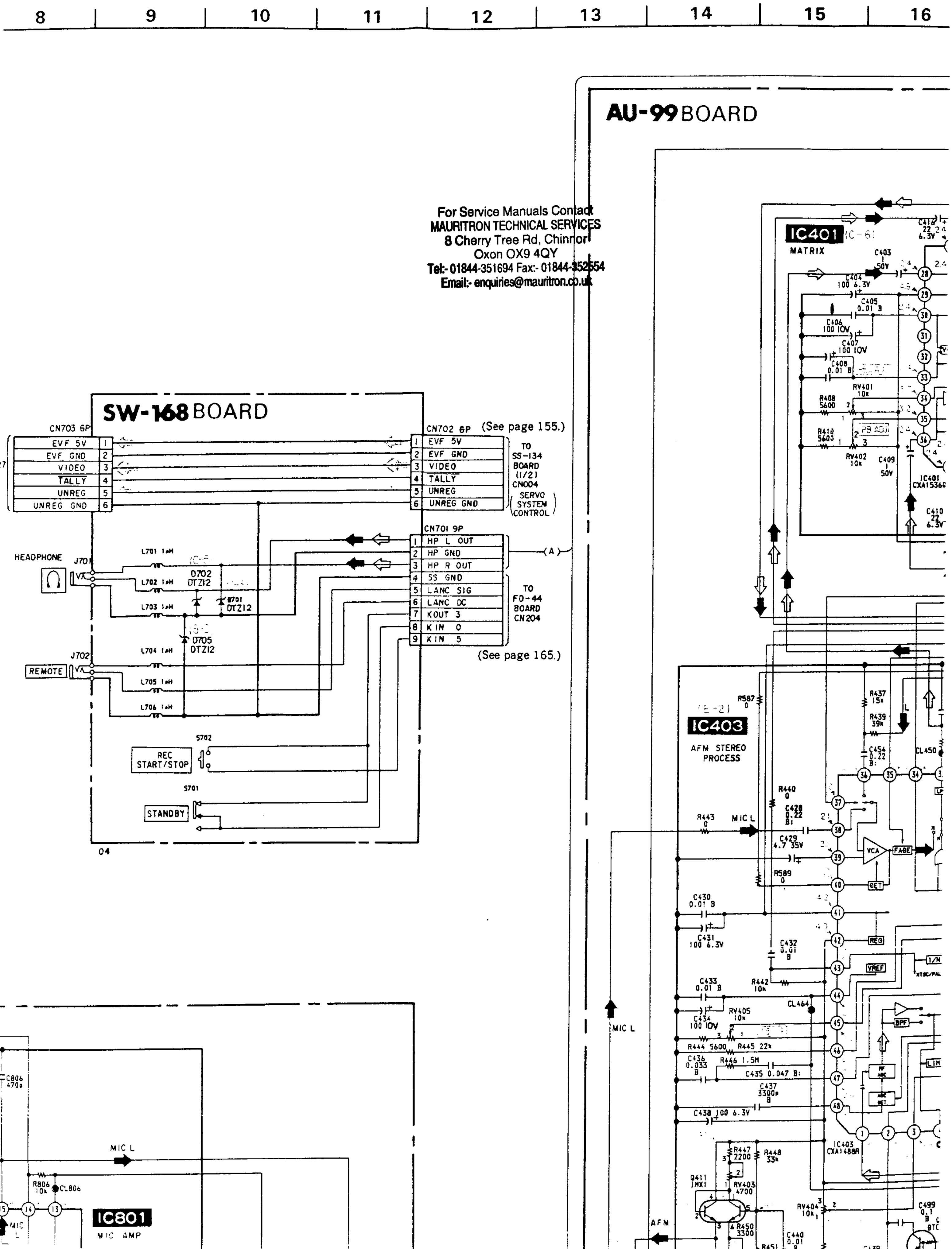
8
9
10
11
12
13
14
15
16
AU-99 BOARD
SW-168 BOARD
CN703 6P
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
CN702 6P
(See page 155.)
TO SS-134 BOARD (1/2) CN004 (SERVO SYSTEM CONTROL)
CN701 9P
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
KOUT 3
KIN 0
KIN 5
TO FD-44 BOARD CN204
(See page 165.)
(A)
HEADPHONE
J701
REMOTE
J702
L701 1µH
L702 1µH
L703 1µH
L704 1µH
L705 1µH
L706 1µH
D702 DTZ12
D701 DTZ12
D705 DTZ12
S702
REC START/STOP
S701
STANDBY
04
IC401
MATRIX
IC401 CXA1536Q
C403 1 50V
C404 100 6.3V
C405 0.01 B
C406 100 10V
C407 100 10V
C408 0.01 B
RV401 10k
R408 5600
R410 5600
RV402 10k
PB ADJ
C409 1 50V
C410 22 6.3V
C416 22 6.3V
IC403
AFM STEREO PROCESS
IC403 CXA1488R
R587 0
R437 15k
R439 39k
C454 0.22 B
CL450
R440 0
C428 0.22 B
R443 0
MIC L
C429 4.7 35V
VCA
FADE
DET
R589 0
C430 0.01 B
C431 100 6.3V
REG
C432 0.01 B
VREF
NTSC/PAL
C433 0.01 B
R442 10k
CL464
C434 100 10V
RV405 10k
BPF
R444 5600
R445 22k
C436 0.033 B
R446 1.5M
C435 0.047 B
C437 3300p B
C438 100 6.3V
R447 2200
R448 33k
Q411 IMX1
RV403 4700
R450 3300
R451
RV404 10k
C440 0.01
C499 0.1
AFM
MIC L
C806 470p
R806 10k
CL806
IC801
MIC AMP
MIC

13	14	15	16	17	18	19	20

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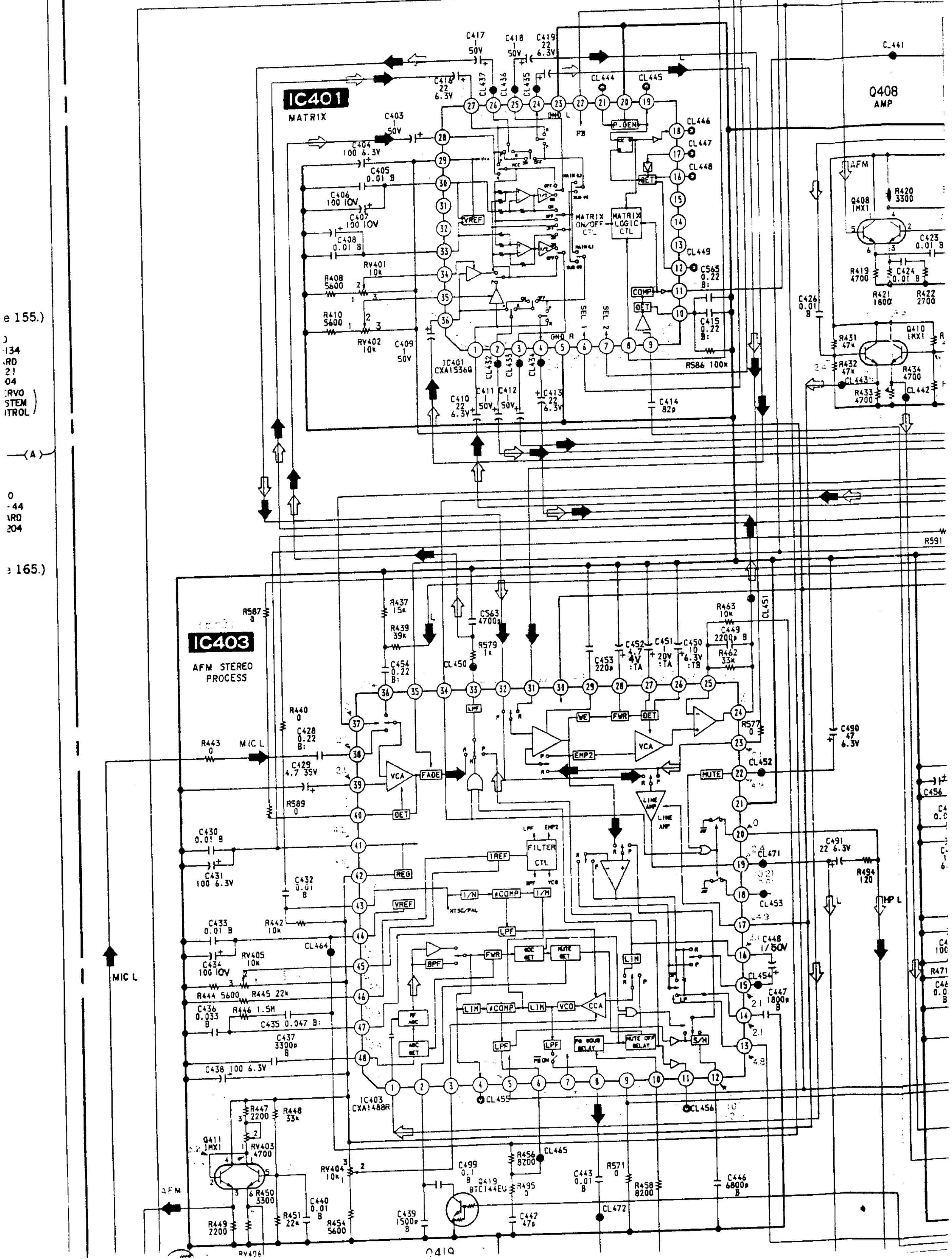
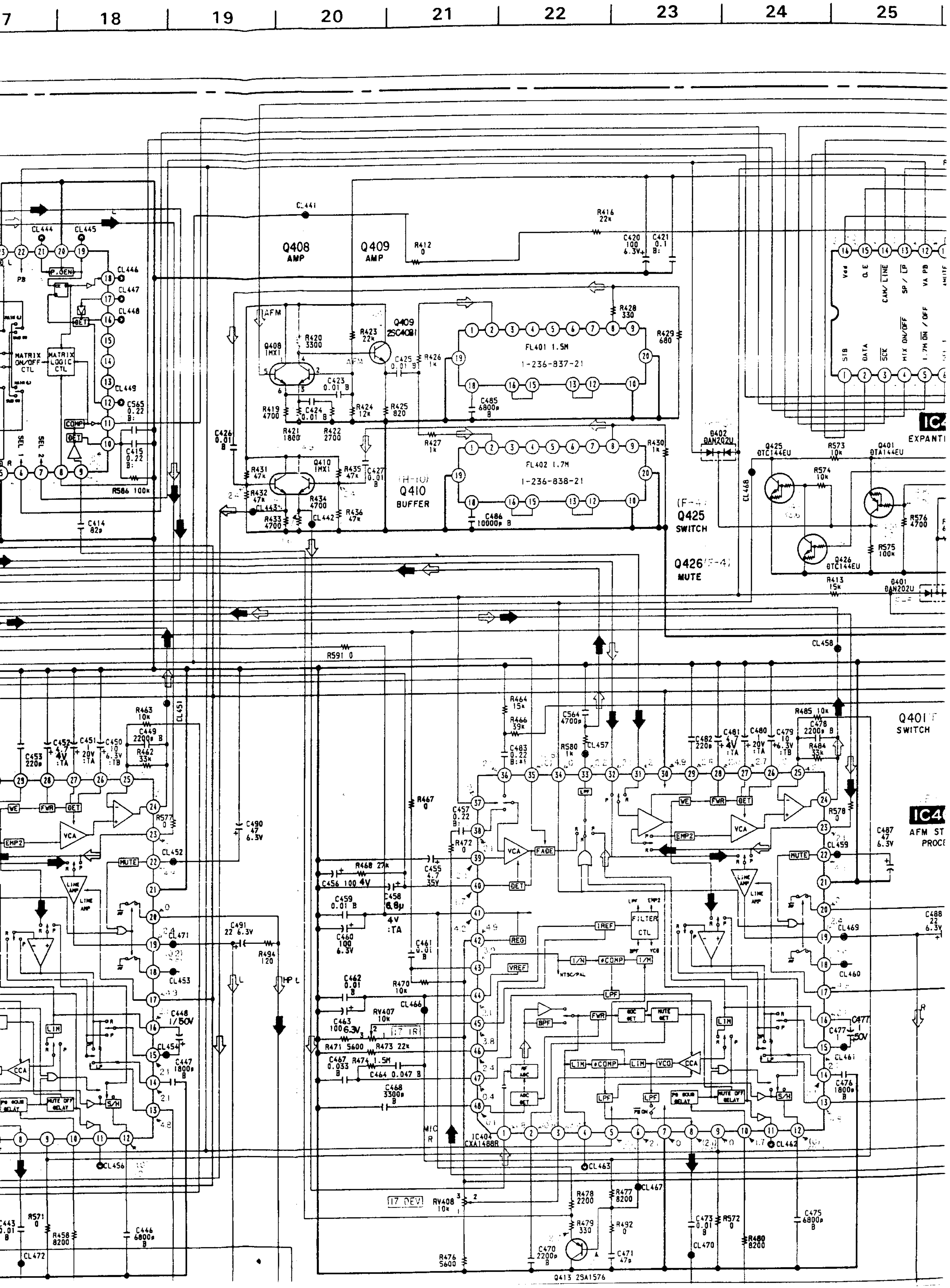
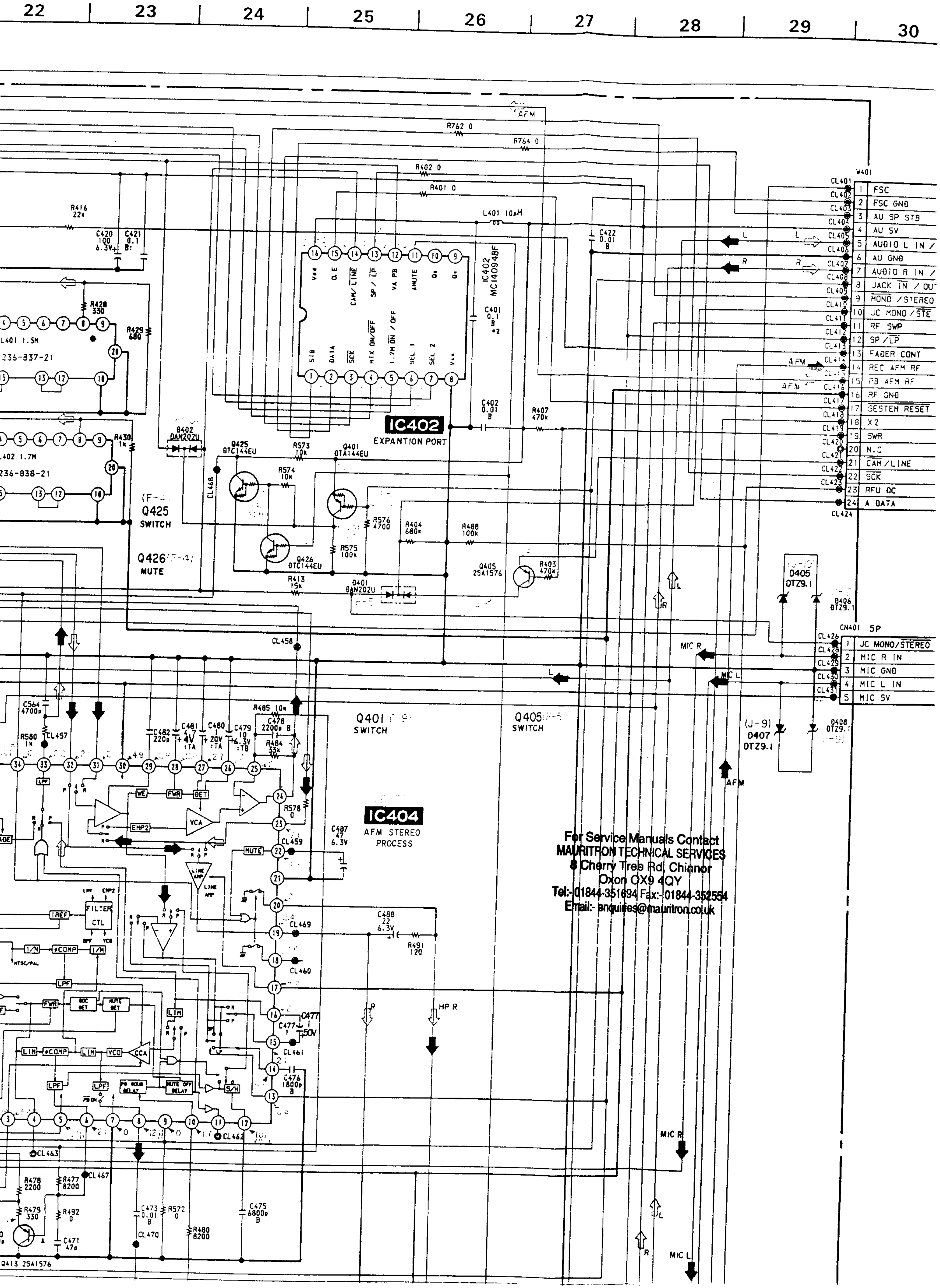
AU-99 BOARD



IC401
MATRIX
IC401 CXA1536Q
C417 1 50V
C418 1 50V
C419 22 6.3V
C416 22 6.3V
CL437
CL436
CL435
CL444
CL445
C403 1 50V
C404 100 6.3V
C405 0.01 B
C406 100 10V
C407 100 10V
C408 0.01 B
RV401 10k
R408 5600
R410 5600
RV402 10k
C409 1 50V
C410 22 6.3V
C411 1 50V
C412 1 50V
C413 22 6.3V
C414 82p
CL432
CL433
CL434
VREF
P.GEN
DET
MATRIX ON/OFF CTL
MATRIX LOGIC CTL
COMP
SEL 1
SEL 2
GND L
GND R
PB
CL446
CL447
CL448
CL449
C565 0.22 B
C415 0.22 B
R586 100k
Q408 AMP
C441
AFM
Q408 IMX1
R420 3300
C423 0.01 B
R419 4700
C424 0.01 B
R421 1800
R422 2700
C426 0.01 B
Q410 IMX1
R431 47k
R432 47k
R434 4700
R433 4700
CL443
CL442
R591
e 155.)
-134
RD
21
04
RVO
STEM
TROL
(A)
0
-44
RD
204
165.)
IC403
AFM STEREO PROCESS
R587 0
R437 15k
R439 39k
C454 0.22 B
C563 4700p
R579 1k
CL450
C453 220p
C452 4.7 4V TA
C451 1 20V TA
C450 10 6.3V TB
R463 10k
C449 2200p B
R462 33k
CL451
R440 0
C428 0.22 B
R443 0
MIC L
C429 4.7 35V
R589 0
C430 0.01 B
C431 100 6.3V
C432 0.01 B
C433 0.01 B
R442 10k
C434 100 10V
RV405 10k
R444 5600
R445 22k
C436 0.033 B
R446 1.5M
C435 0.047 B
C437 3300p B
C438 100 6.3V
CL464
VCA
FADE
DET
REG
VREF
LPF
VE
FWR
EMP2
MUTE
LINE AMP
IREF
FILTER CTL
1/N
#COMP
1/M
NTSC/PAL
BPF
SOC DET
MUTE DET
L1M
LIM
VCO
CCA
RF AGC
AGC DET
PB SOUND DELAY
MUTE OFF DELAY
S/H
R577 0
C490 47 6.3V
CL452
CL471
C491 22 6.3V
R494 120
CL453
C448 1/50V
CL454
C447 1800p B
HP L
C456
R471
CL455
CL456
IC403 CXA1488R
R447 2200
R448 33k
Q411 IMX1
RV403 4700
R450 3300
R449 2200
R451 22k
C440 0.01 B
R454 5600
RV404 10k
C499 0.1 B
Q419 DTC144EU
R456 8200
CL465
R495 0
C439 1500p B
C442 47p
C443 0.01 B
R571 0
CL472
R458 8200
C446 6800p B
AFM
MIC L
RV406
Q419


17
18
19
20
21
22
23
24
25
Q408
AMP
Q409
AMP
Q409
2SC4081
Q408
IMX1
Q410
IMX1
Q410
BUFFER
FL401 1.5M
1-236-837-21
FL402 1.7M
1-236-838-21
Q425
SWITCH
Q426
MUTE
Q401
SWITCH
Q425
DTC144EU
Q401
DTA144EU
Q426
DTC144EU
D402
DAN202U
D401
DAN202U
Q413 2SA1576
IC404
CXA1488R
IC4
EXPANTI
IC4
AFM ST
PROC
MATRIX ON/OFF CTL
MATRIX LOGIC CTL
P.GEN
DET
COMP
SEL 1
SEL 2
Vdd
O.E
CAM/LINE
SP/LP
VA PB
STB
DATA
SCK
MIX ON/OFF
1.7M ON/OFF
AFM
CL441
CL442
CL443
CL444
CL445
CL446
CL447
CL448
CL449
CL451
CL452
CL453
CL454
CL456
CL457
CL458
CL459
CL460
CL461
CL462
CL463
CL466
CL467
CL469
CL470
CL471
CL472
R412 0
R416 22k
R419 4700
R420 3300
R421 1800
R422 2700
R423 22k
R424 12k
R425 820
R426 1k
R427 1k
R428 330
R429 680
R430 1k
R431 47k
R432 47k
R433 4700
R434 4700
R435 47k
R436 47k
R413 15k
R458 8200
R462 33k
R463 10k
R464 15k
R466 39k
R467 0
R468 27k
R470 10k
R471 5600
R472 0
R473 22k
R474 1.5M
R476 5600
R477 8200
R478 2200
R479 330
R480 8200
R484 33k
R485 10k
R492 0
R494 120
R571 0
R572 0
R573 10k
R574 10k
R575 100k
R576 4700
R577 0
R578 0
R580 1k
R586 100k
R591 0
RV407 10k
RV408 10k
17 IR
17 DEV
C414 82p
C415 0.22 B
C420 100 6.3V
C421 0.1 B
C423 0.01 B
C424 0.01 B
C425 0.01 B
C426 0.01 B
C427 0.01 B
C443 0.01 B
C446 6800p B
C447 1800p B
C448 1/50V
C449 2200p B
C450 10 6.3V :TB
C451 1 20V :TA
C452 4.7 4V
C453 220p
C455 4.7 35V
C456 100 4V
C457 0.22 B
C458 6.8μ 4V :TA
C459 0.01 B
C460 100 6.3V
C461 0.01 B
C462 0.01 B
C463 100 6.3V
C464 0.047 B
C467 0.033 B
C468 3300p B
C470 2200p B
C471 47p
C473 0.01 B
C475 6800p B
C476 1800p B
C477 1 50V
C478 2200p B
C479 10 6.3V :TB
C480 1 20V :TA
C481 4.7 4V :TA
C482 220p
C483 0.22 B
C485 6800p B
C486 10000p B
C487 47 6.3V
C488 22 6.3V
C490 47 6.3V
C491 22 6.3V
C564 4700p
C565 0.22 B
WE
FWR
DET
VCA
EMP2
MUTE
LINE AMP
LIM
CCA
S/H
PB SOUR DELAY
MUTE OFF DELAY
FADE
REG
VREF
IREF
FILTER CTL
1/N
fCOMP
LPF
BPF
RF AGC
AGC DET
MUTE DET
VCO
NTSC/PAL
MIC R
HP L
L


22
23
24
25
26
27
28
29
30
AFM
R762 0
R764 0
R402 0
R401 0
L401 10μH
R416 22k
C420 100 6.3V
C421 0.1 B
C422 0.01 B
IC402 MC14094BF
Vdd
O.E
CAM/LINE
SP / LP
VA PB
AMUTE
STB
DATA
SCK
MIX ON/OFF
1.7M ON / OFF
SEL 1
SEL 2
Vss
C401 0.1 B
R428 330
R429 680
L401 1.5M
236-837-21
L402 1.7M
236-838-21
R430 1k
C402 0.01 B
R407 470k
IC402
EXPANTION PORT
D402 DAN202U
Q425 DTC144EU
R573 10k
Q401 DTA144EU
R574 10k
CL468
Q425 SWITCH
Q426 MUTE
R576 4700
R575 100k
Q426 DTC144EU
R404 680k
R488 100k
Q405 2SA1576
R403 470k
R413 15k
D401 DAN202U
CL458
W401
CL401 1 FSC
CL402 2 FSC GND
CL403 3 AU SP STB
CL404 4 AU SV
CL405 5 AUDIO L IN /
CL406 6 AU GND
CL407 7 AUDIO R IN /
CL408 8 JACK IN / OUT
CL409 9 MONO / STEREO
CL410 10 JC MONO / STE
CL411 11 RF SWP
CL412 12 SP / LP
CL413 13 FADER CONT
CL414 14 REC AFM RF
CL415 15 PB AFM RF
CL416 16 RF GND
CL417 17 SESTEM RESET
CL418 18 X2
CL419 19 SWR
CL420 20 N.C
CL421 21 CAM / LINE
CL422 22 SCK
CL423 23 RFU DC
CL424 24 A DATA
D405 DTZ9.1
D406 DTZ9.1
CN401 5P
CL426 1 JC MONO/STEREO
CL428 2 MIC R IN
CL429 3 MIC GND
CL430 4 MIC L IN
CL431 5 MIC SV
MIC R
MIC L
L
R
D407 DTZ9.1
D408 DTZ9.1
AFM
C564 4700p
R580 1k
CL457
C482 220p
C481 4V
C480 20V
C479 10 6.3V
R485 10k
C478 2200p B
R484 33k
Q401 SWITCH
Q405 SWITCH
WE
FWR
DET
EMP2
VCA
R578 0
IC404
AFM STEREO PROCESS
C487 47 6.3V
MUTE
CL459
LINE AMP
FILTER CTL
IREF
1/N
ΦCOMP
LPF
FWR
DOC DET
MUTE DET
LIM
VCO
CCA
PB DOUB DELAY
MUTE OFF DELAY
S/H
C488 22 6.3V
R491 120
CL469
CL460
C477 1 50V
CL461
C476 1800p B
HP R
CL462
CL463
CL467
R478 2200
R477 8200
R479 330
R492 0
C471 47p
C473 0.01 B
R572 0
CL470
R480 8200
C475 6800p B
Q413 2SA1576

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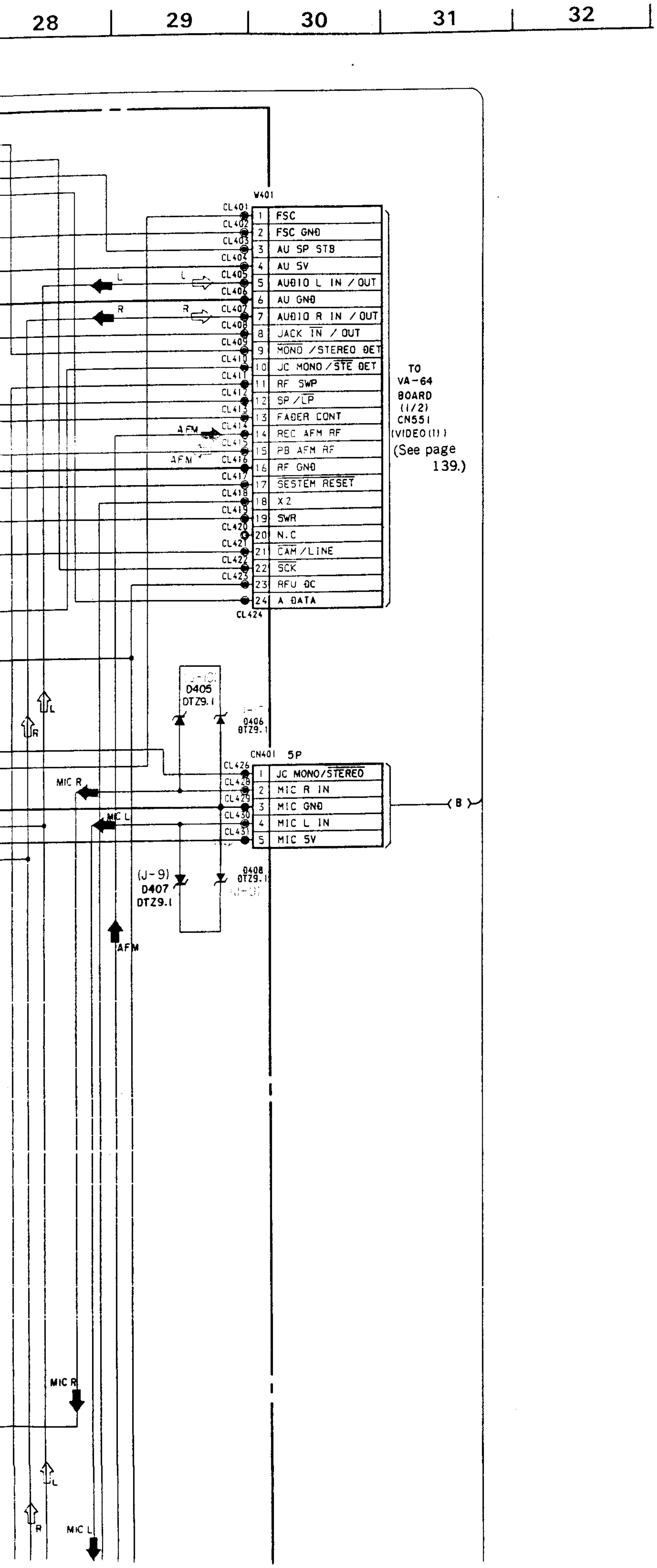
28
29
30
31
32
W401
CL401
CL402
CL403
CL404
CL405
CL406
CL407
CL408
CL409
CL410
CL411
CL412
CL413
CL414
CL415
CL416
CL417
CL418
CL419
CL420
CL421
CL422
CL423
CL424
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN / OUT
6 AU GND
7 AUDIO R IN / OUT
8 JACK IN / OUT
9 MONO /STEREO DET
10 JC MONO / STE DET
11 RF SWP
12 SP / LP
13 FADER CONT
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SESTEM RESET
18 X2
19 SWR
20 N.C
21 CAM / LINE
22 SCK
23 RFU DC
24 A DATA
L
R
L
R
AFM
AFM
TO
VA-64
BOARD
(1/2)
CN551
(VIDEO(1))
(See page
139.)
D405
DTZ9.1
D406
DTZ9.1
CN401 5P
CL426
CL428
CL429
CL430
CL431
1 JC MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
(B)
MIC R
MIC L
(J-9)
D407
DTZ9.1
D408
DTZ9.1
L
R
AFM
MIC R
L
R
MIC L

(See page 18

E

F

G

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Email:- enquiries@mauritron.co.uk

H

I

J

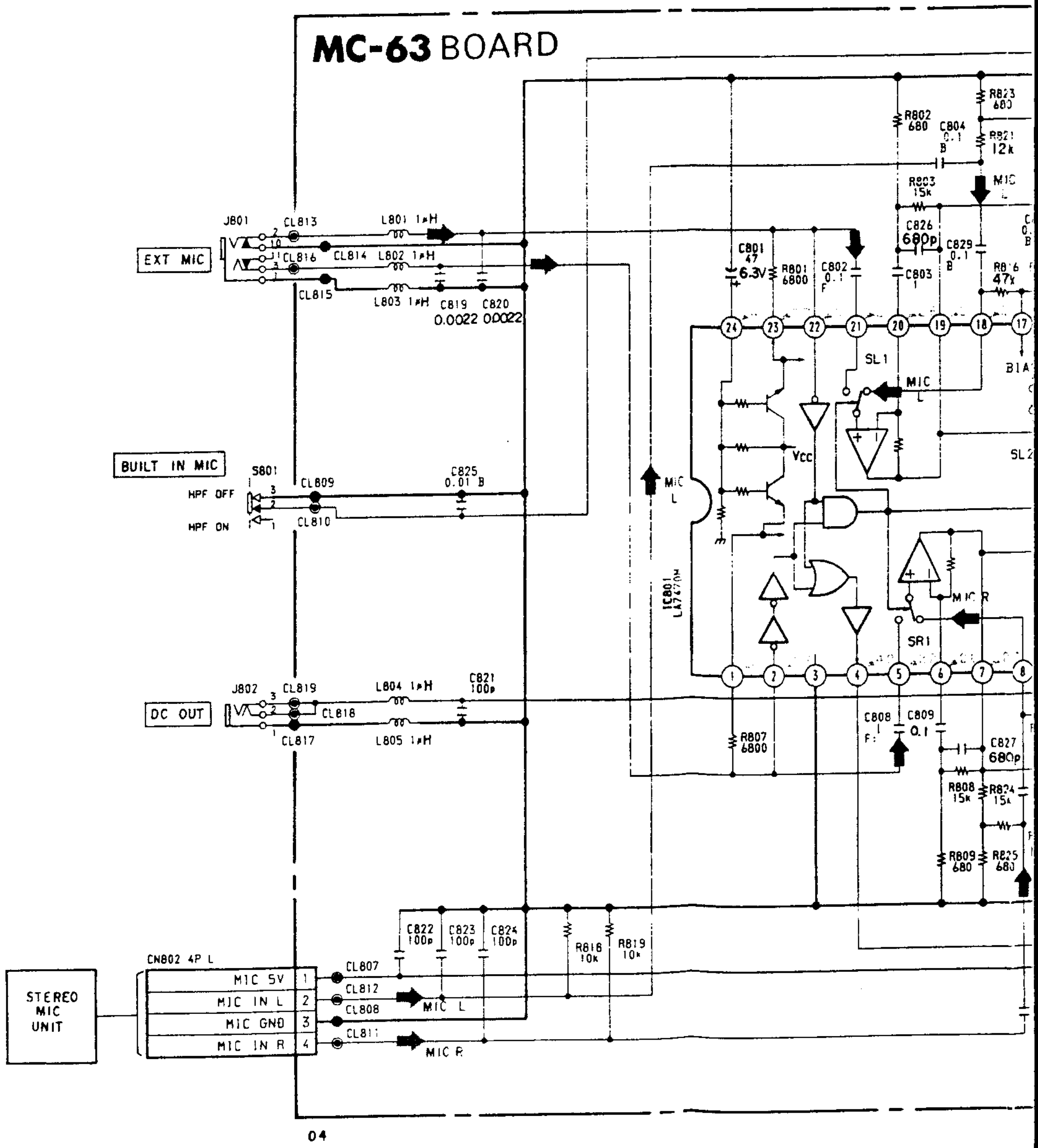
K

L

M

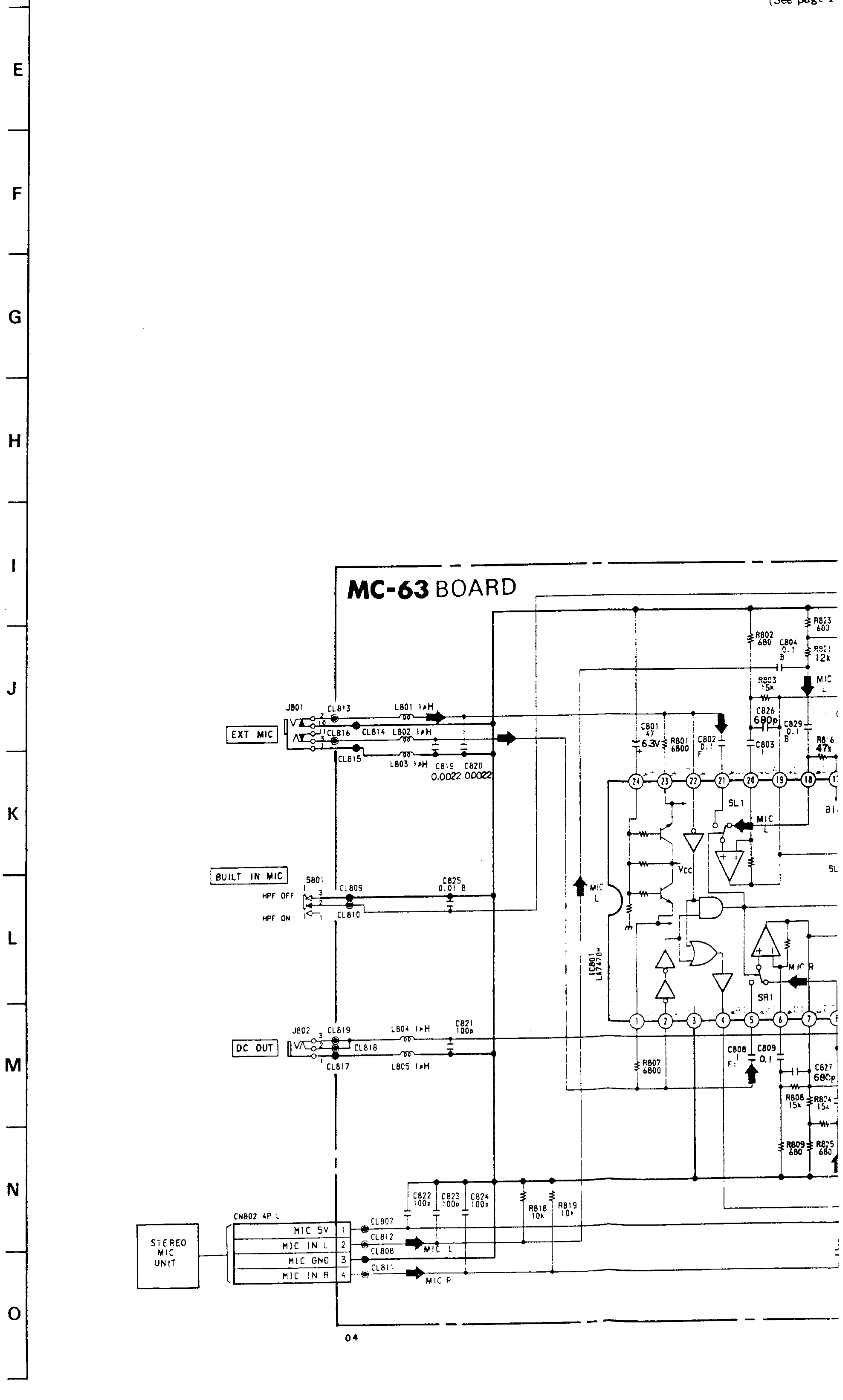
N

O


MC-63 BOARD
J801
CL813
L801 1μH
EXT MIC
CL816
CL814
L802 1μH
CL815
L803 1μH
C819 0.0022
C820 0.0022
C801 47 6.3V
R801 6800
C802 0.1 F
R802 680
C804 0.1 B
R823 680
R821 12k
R803 15k
MIC L
C826 680p
C829 0.1 B
C803 1
R816 47k
SL1
MIC L
BIAS
Vcc
SL2
BUILT IN MIC
S801
HPF OFF
HPF ON
CL809
CL810
C825 0.01 B
MIC L
IC801 LA7470M
MIC R
SR1
DC OUT
J802
CL819
CL818
CL817
L804 1μH
L805 1μH
C821 100p
C808 1 F
C809 0.1
R807 6800
C827 680p
R808 15k
R824 15k
R809 680
R825 680
C822 100p
C823 100p
C824 100p
R818 10k
R819 10k
CN802 4P L
STEREO MIC UNIT
MIC 5V
MIC IN L
MIC GND
MIC IN R
CL807
CL812
CL808
CL811
MIC L
MIC R
04

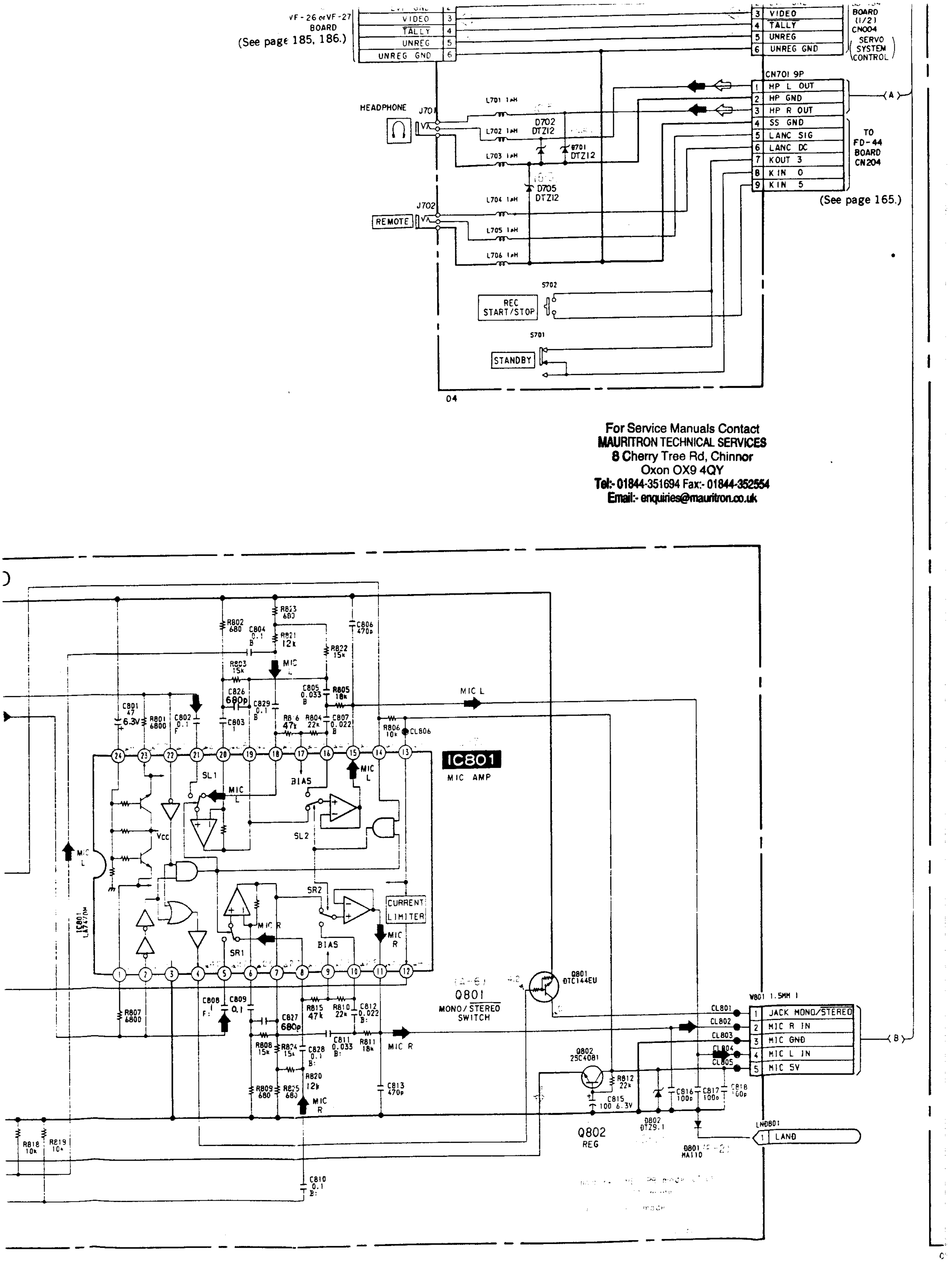
VF

(See page 1


E
F
G
H
I
J
K
L
M
N
O
MC-63 BOARD
J801
CL813
L801 1μH
EXT MIC
CL816
CL814
L802 1μH
CL815
L803 1μH
C819 0.0022
C820 0.0022
BUILT IN MIC
S801
HPF OFF
HPF ON
CL809
CL810
C825 0.01 B
DC OUT
J802
CL819
CL818
CL817
L804 1μH
L805 1μH
C821 100p
R802 680
C804 0.1 B
R823 680
R821 12k
R803 15k
MIC L
C826 680p
C829 0.1 B
R816 47k
C801 47 6.3V
R801 6800
C802 0.1 F
C803 1
SL1
MIC L
Vcc
MIC L
IC801 LA7470M
MIC R
SR1
R807 6800
C808 1 F
C809 0.1
C827 680p
R808 15k
R824 15k
R809 680
R825 680
C822 100p
C823 100p
C824 100p
R818 10k
R819 10k
CN802 4P L
STEREO MIC UNIT
MIC 5V
MIC IN L
MIC GND
MIC IN R
CL807
CL812
CL808
CL811
MIC L
MIC R
04

AUDIO

CCD-V600/V701



VF-26 or VF-27 BOARD
(See page 185, 186.)
VIDEO 3
TALLY 4
UNREG 5
UNREG GND 6
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
BOARD (1/2) CN004
SERVO SYSTEM CONTROL
CN701 9P
1 HP L OUT
2 HP GND
3 HP R OUT
4 SS GND
5 LANC SIG
6 LANC DC
7 KOUT 3
8 KIN 0
9 KIN 5
TO FD-44 BOARD CN204
(See page 165.)
A
HEADPHONE
J701
L701 1μH
L702 1μH
L703 1μH
D702 DTZ12
D701 DTZ12
D705 DTZ12
J702
REMOTE
L704 1μH
L705 1μH
L706 1μH
S702
REC START/STOP
S701
STANDBY
04
R823 680
R802 680
C804 0.1 B
R821 12k
R822 15k
C806 470p
R803 15k
MIC L
C826 680p
C829 0.1 B
C805 0.033 B
R805 18k
MIC L
C801 47 6.3V
R801 6800
C802 0.1 F
C803 1
R816 47k
R804 22k
C807 0.022 B
R806 10k
CL806
IC801
MIC AMP
SL1
MIC L
BIAS
MIC L
SL2
VCC
MIC L
IC801 LA7470M
SR2
CURRENT LIMITER
MIC R
MIC R
SR1
BIAS
Q801 DTC144EU
Q801 MONO/STEREO SWITCH
C808 1 F
C809 0.1
C827 680p
R815 47k
R810 22k
C812 0.022 B
R807 6800
R808 15k
R824 15k
C828 0.1 B
C811 0.033 B
R811 18k
MIC R
R820 12k
R809 680
R825 680
MIC R
C813 470p
R818 10k
R819 10k
C810 0.1 B
Q802 2SC4081
R812 22k
C815 100 6.3V
Q802 REG
D802 DTZ9.1
C816 100p
C817 100p
C818 100p
D801 MA110
W801 1.5MM 1
CL801
CL802
CL803
CL804
CL805
1 JACK MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
B
LND801
1 LAND

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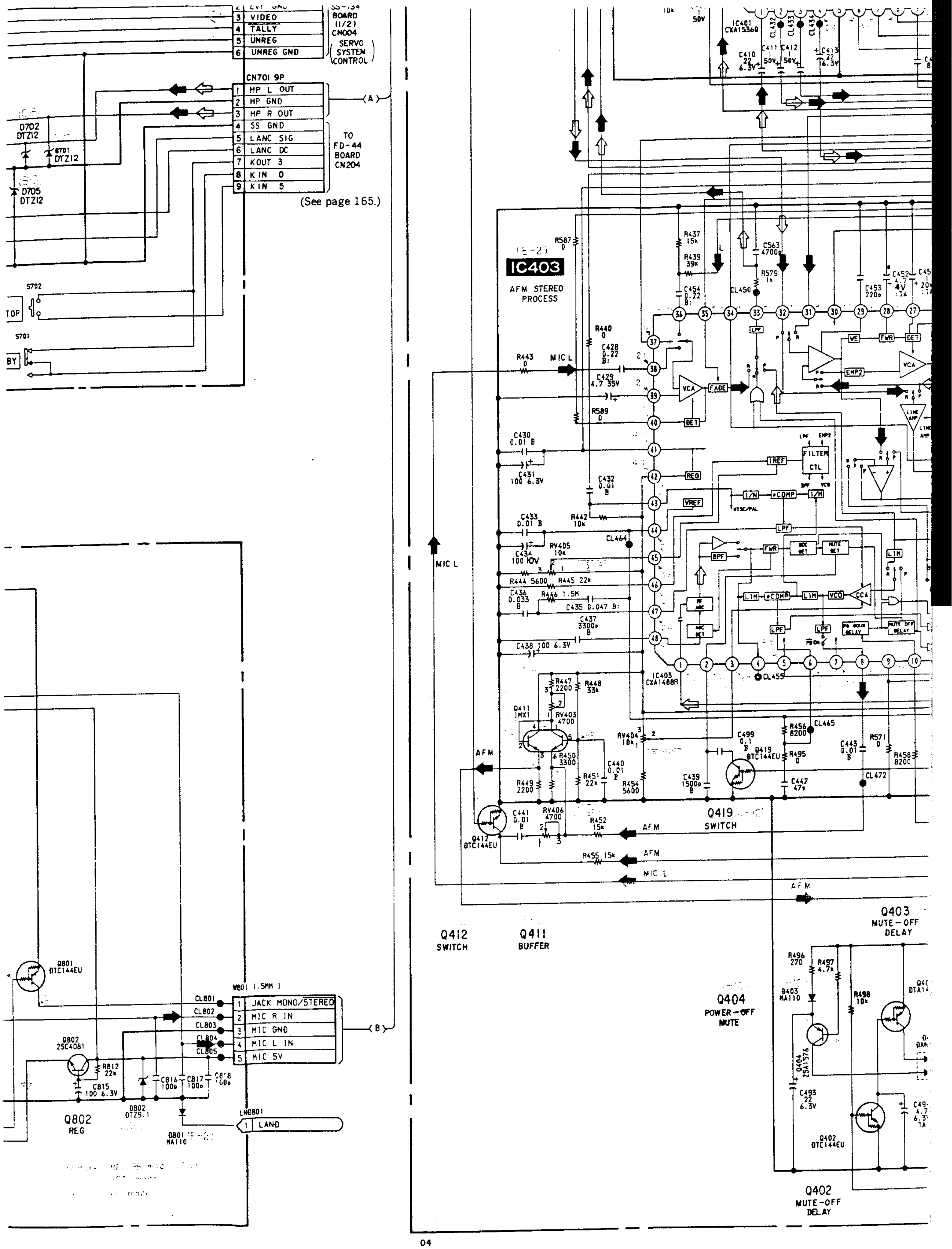
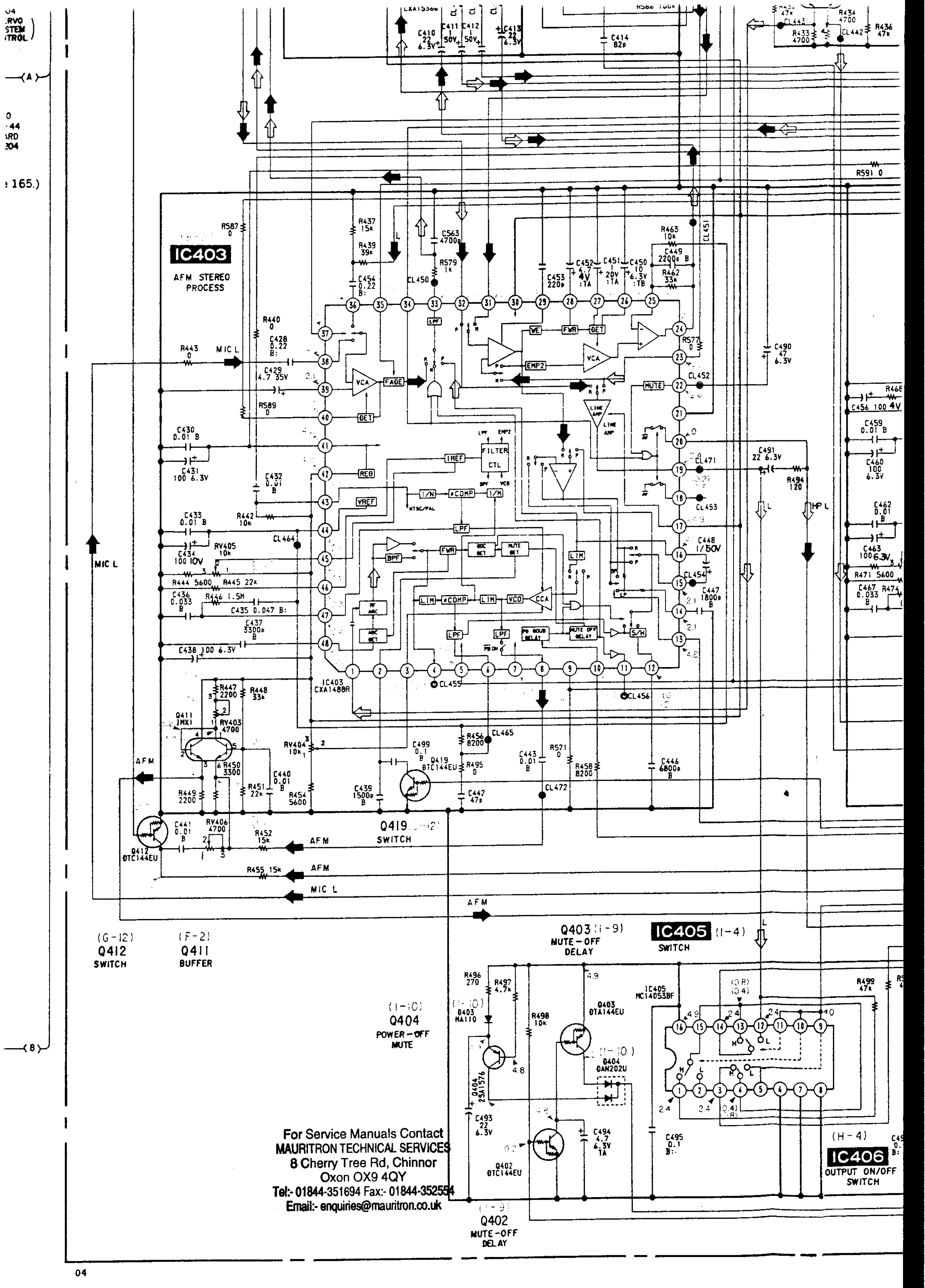

3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
SS-134 BOARD (1/2) CN004
SERVO SYSTEM CONTROL
CN701 9P
1 HP L OUT
2 HP GND
3 HP R OUT
4 SS GND
5 LANC SIG
6 LANC DC
7 KOUT 3
8 KIN 0
9 KIN 5
TO FD-44 BOARD CN204
(See page 165.)
D702 DTZ12
D701 DTZ12
D705 DTZ12
S702
S701
IC401 CXA1536Q
IC403
AFM STEREO PROCESS
IC403 CXA1488R
MIC L
AFM
Q411 JMX1
Q412 DTC144EU
Q419 DTC144EU
Q419 SWITCH
Q412 SWITCH
Q411 BUFFER
Q403 MUTE-OFF DELAY
Q404 POWER-OFF MUTE
Q404 2SA1576
D403 MA110
Q402 DTC144EU
Q402 MUTE-OFF DELAY
Q801 DTC144EU
Q802 2SC4081
Q802 REG
D802 DTZ9.1
D801 MA110
W801 1.5MM
1 JACK MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
LND801
1 LAND
VCA
FADE
DET
REG
VREF
FILTER CTL
1/N
COMP
LPF
BPF
FWR
LIM
VCO
CCA
EMP2
LINE AMP
MUTE OFF DELAY
04


RVO
STEM
TROL
(A)
0
-44
ARD
304
165.)
IC403
AFM STEREO
PROCESS
IC403
CXA1488R
R587 0
R437 15k
R439 39k
C563 4700p
R579 1k
CL450
C454 0.22 B
R440 0
C428 0.22 B
R443 0
MIC L
C429 4.7 35V
R589 0
C430 0.01 B
C431 100 6.3V
C432 0.01 B
C433 0.01 B
R442 10k
CL464
C434 100 10V
RV405 10k
R444 5600
R445 22k
C436 0.033 B
R446 1.5M
C435 0.047 B
C437 3300p B
C438 100 6.3V
VCA
FADE
DET
REG
IREF
VREF
FILTER CTL
LPF
EMP2
1/N
fCOMP
1/M
NTSC/PAL
BPF
FWR
BPF
RF ABC
ABC DET
DOC DET
MUTE DET
LIM
VCO
CCA
PB SOUND DELAY
MUTE OFF DELAY
S/H
WE
MUTE
LINE AMP
C410 22 6.3V
C411 1 50V
C412 1 50V
C413 22 6.3V
C414 82p
R586 100k
R434 4700
R433 4700
R436 47k
CL443
CL442
R591 0
R463 10k
C449 2200p B
R462 33k
CL451
C453 220p
C452 4.7 4V TA
C451 1 20V TA
C450 10 6.3V TB
R577 0
C490 47 6.3V
CL452
CL471
C491 22 6.3V
R494 120
CL453
HP L
C448 1/50V
CL454
C447 1800p B
CL455
CL456
R466
C456 100 4V
C459 0.01 B
C460 100 6.3V
C462 0.01 B
C463 100 6.3V
R471 5600
C467 0.033 B
R474
R447 2200
R448 33k
Q411 IMX1
RV403 4700
AFM
RV404 10k
R456 8200
CL465
C499 0.1 B
Q419 DTC144EU
R495 0
C443 0.01 B
R571 0
R458 8200
C446 6800p B
CL472
R449 2200
R450 3300
R451 22k
C440 0.01 B
R454 5600
C439 1500p B
C447 47p
C441 0.01 B
RV406 4700
R452 15k
Q412 DTC144EU
Q419 (J-2) SWITCH
R455 15k
MIC L
AFM
(G-12) Q412 SWITCH
(F-2) Q411 BUFFER
(I-10) Q404 POWER-OFF MUTE
Q403 (I-9) MUTE-OFF DELAY
IC405 (I-4) SWITCH
IC405 MC14053BF
R496 270
R497 4.7k
D403 MA110
R498 10k
Q403 DTA144EU
D404 DAN202U
Q404 2SA1576
C493 22 6.3V
C494 4.7 6.3V TA
Q402 DTC144EU
C495 0.1 B
R499 47k
(H-4) IC406 OUTPUT ON/OFF SWITCH
(I-9) Q402 MUTE-OFF DELAY
04

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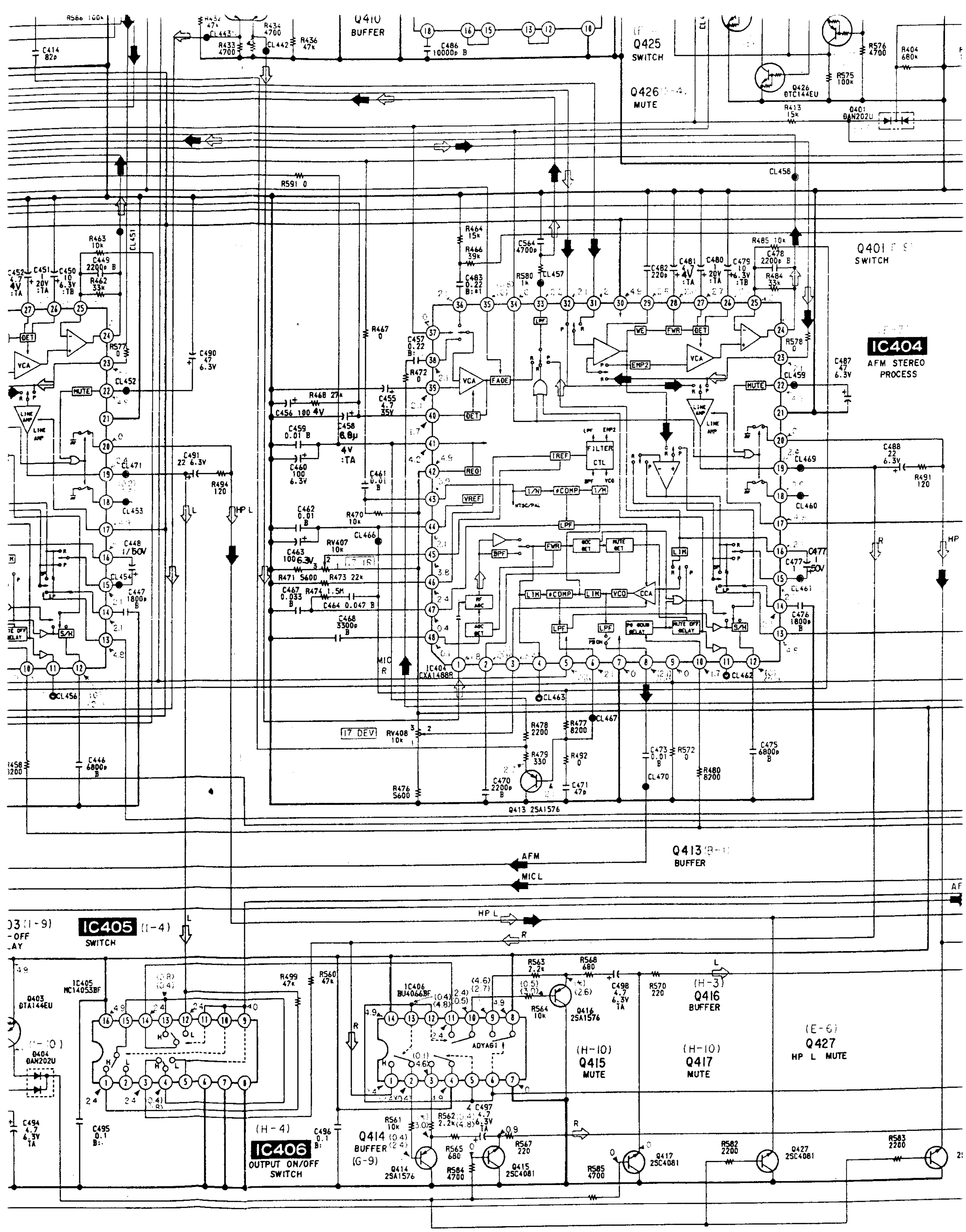
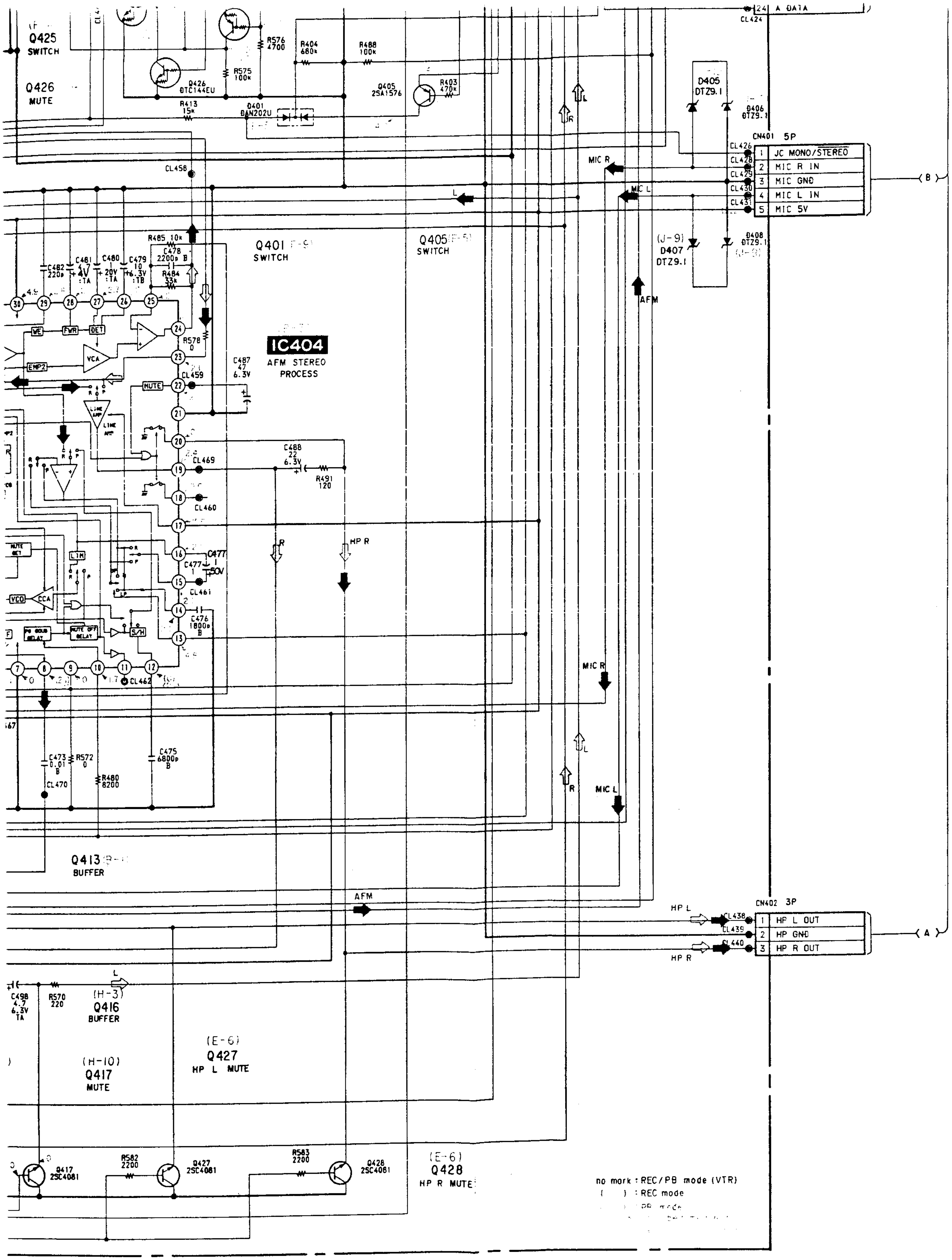
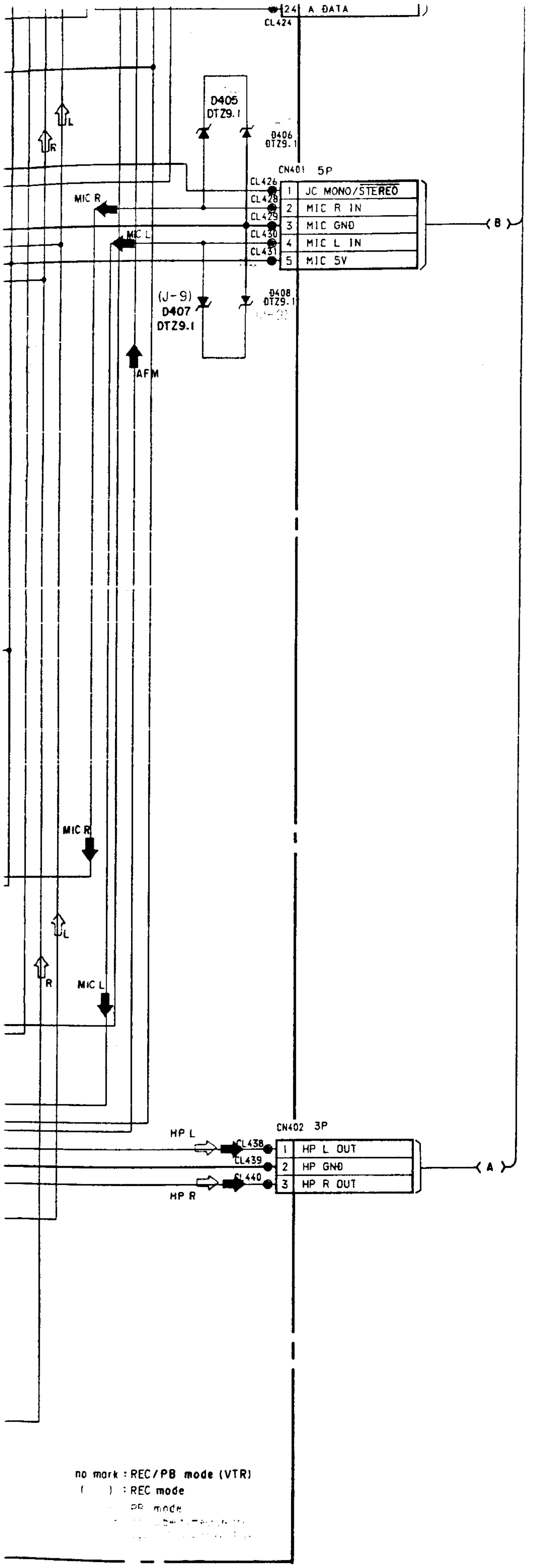

Q410
BUFFER
C486 10000p B
Q425
SWITCH
Q426
MUTE
Q426 DTC144EU
R576 4700
R575 100k
R404 680k
R413 15k
Q401 DAN202U
R586 100k
R432 47k
CL443
R434 4700
R433 4700
CL442
R436 47k
C414 82p
R591 0
CL458
CL451
R463 10k
C449 2200p B
R462 33k
C452 4.7 4V :TA
C451 1 20V :TA
C450 10 6.3V :TB
R577 0
C490 47 6.3V
MUTE
CL452
LINE AMP
CL471
CL453
C448 1/50V
CL454
C447 1800p B
S/H
CL456
C446 6800p B
R458 8200
C491 22 6.3V
R494 120
HP L
R467 0
R464 15k
R466 39k
C483 0.22 B:#1
C564 4700p
R580 1k
CL457
C457 0.22 B:
R472 0
R468 27k
C455 4.7 35V
C456 100 4V
C459 0.01 B
C458 6.8µ 4V :TA
C460 100 6.3V
C461 0.01 B
C462 0.01 B
R470 10k
CL466
C463 100 6.3V
RV407 10k
R471 5600
R473 22k
C467 0.033 B
R474 1.5M
C464 0.047 B
C468 3300p B
MIC R
IC404 CXA1488R
VCA
FADE
DET
REG
VREF
IREF
FILTER CTL
LPF
EMP2
NTSC/PAL
1/N
φCOMP
1/M
BPF
FWR
AGC DET
MUTE DET
LIM
VCO
CCA
RF AGC
AGC DET
PB SOUND DELAY
MUTE OFF DELAY
CL463
CL467
CL462
17 DEV
RV408 10k
R478 2200
R477 8200
R479 330
R492 0
C470 2200p B
C471 47p
R476 5600
Q413 2SA1576
C473 0.01 B
R572 0
CL470
R480 8200
C475 6800p B
C482 220p
C481 4.7 4V :TA
C480 1 20V :TA
C479 10 6.3V :TB
R485 10k
C478 2200p B
R484 33k
WE
FWR
DET
EMP2
VCA
R578 0
CL459
C487 47 6.3V
IC404
AFM STEREO PROCESS
Q401
SWITCH
CL469
C488 22 6.3V
R491 120
CL460
C477 1 50V
CL461
C476 1800p B
Q413
BUFFER
AFM
MIC L
HP L
R
L
HP
IC405
SWITCH
IC405 MC14053BF
Q403 DTA144EU
Q404 DAN202U
C494 4.7 6.3V TA
C495 0.1 B:
R499 47k
R560 47k
C496 0.1 B:
IC406
OUTPUT ON/OFF SWITCH
IC406 BU4066BF
ADYA61
R563 2.2k
R568 680
C498 4.7 6.3V TA
R570 220
R564 10k
Q416 2SA1576
Q416
BUFFER
Q427
HP L MUTE
Q415
MUTE
Q417
MUTE
Q414
BUFFER
R561 10k
R562 2.2k
C497 4.7 6.3V TA
R567 220
R565 680
R584 4700
Q414 2SA1576
Q415 2SC4081
Q417 2SC4081
R585 4700
R582 2200
Q427 2SC4081
R583 2200


Q425
SWITCH
Q426
MUTE
R576 4700
R404 680k
R488 100k
R575 100k
Q426 DTC144EU
R413 15k
D401 DAN202U
Q405 2SA1576
R403 470k
D405 DTZ9.1
D406 DTZ9.1
CL424
24 A DATA
CN401 5P
CL426
CL428
CL429
CL430
CL431
1 JC MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
(B)
MIC R
MIC L
CL458
L
R
Q401
SWITCH
Q405
SWITCH
D407 DTZ9.1
D408 DTZ9.1
(J-9)
AFM
R485 10k
C478 2200p B
R484 33k
C482 220p
C481 4V TA
C480 20V TA
C479 10 6.3V TB
IC404
AFM STEREO PROCESS
R578 0
C487 47 6.3V
CL459
MUTE
VCA
EMP2
WE
FWR
DET
LINE AMP
C488 22 6.3V
R491 120
CL469
CL460
HP R
C477 1 50V
CL461
C476 1800p B
LIM
VCO
CCA
MUTE DET
MUTE OFF DELAY
PB SOUND DELAY
S/H
CL462
MIC R
C473 0.01 B
R572 0
R480 8200
C475 6800p B
CL470
MIC L
Q413
BUFFER
AFM
CN402 3P
CL438
CL439
CL440
HP L
HP R
1 HP L OUT
2 HP GND
3 HP R OUT
(A)
C498 4.7 6.3V TA
R570 220
(H-3)
Q416
BUFFER
(E-6)
Q427
HP L MUTE
(H-10)
Q417
MUTE
Q417 2SC4081
R582 2200
Q427 2SC4081
R583 2200
Q428 2SC4081
(E-6)
Q428
HP R MUTE

no mark : REC/PB mode (VTR)
( ) : REC mode


24 A DATA
CL424
D405
DTZ9.1
D406
DTZ9.1
CN401 5P
CL426
CL428
CL429
CL430
CL431
1 JC MONO/STEREO
2 MIC R IN
3 MIC GND
4 MIC L IN
5 MIC 5V
B
MIC R
MIC L
L
R
(J-9)
D407
DTZ9.1
D408
DTZ9.1
AFM
MIC R
L
R
MIC L
CN402 3P
HP L
CL438
CL439
CL440
HP R
1 HP L OUT
2 HP GND
3 HP R OUT
A

no mork : REC/PB mode (VTR)
( ) : REC mode
PB mode
[illegible]

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• **Signal path**

	AUDIO Signal
REC	➡
PB	⇨

Signal path

	REC	REC/PB	PB
Ref. signal	➡	⇨	⇨

DIO

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AU-99 (AUDIO PROCESS), MC-63 (MIC AMP), SW-168 (CAMERA REC SWITCH) PRI

—Ref. No. AU-99, MC-63, SW-168 BOARDS : 6000 series—

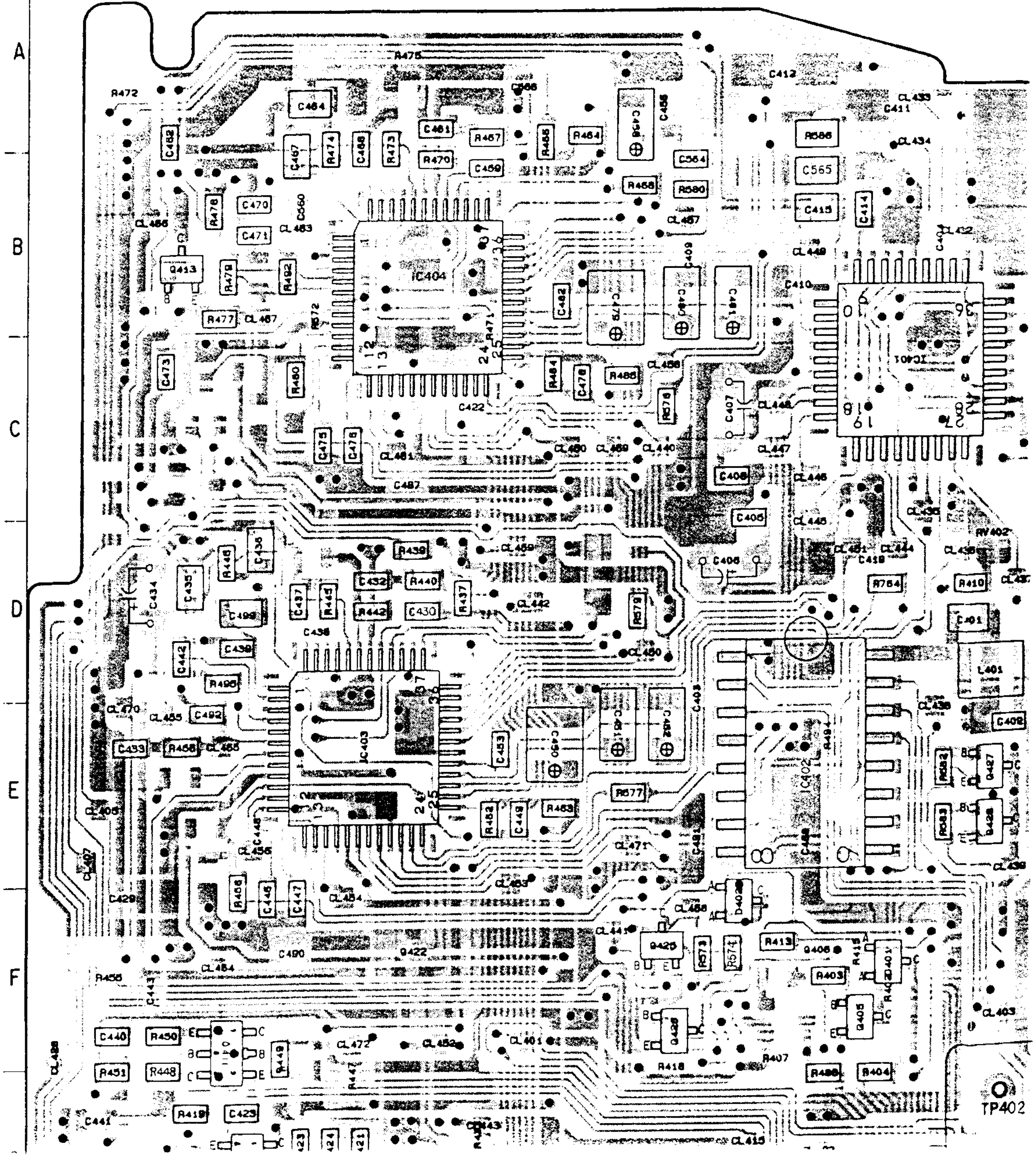
< DIODE >		
D401	8-719-941-86	DAN202U
D402	8-719-941-86	DAN202U
D403	8-719-404-46	MA110
D404	8-719-941-86	DAN202U
D405	8-719-977-22	DTZ9. 1
D406	8-719-977-22	DTZ9. 1
D407	8-719-977-22	DTZ9. 1
D408	8-719-977-22	DTZ9. 1

< IC >		
IC401	8-759-823-21	CXA-1536Q
IC402	8-759-009-22	MC14094BF
IC403	8-759-823-19	CXA-1488R
IC404	8-759-823-19	CXA-1488R
IC405	8-759-300-71	HD14053BF
IC406	8-759-008-67	MC14066BF

< TRANSIST
Q401
Q402
Q403
Q404
Q405

Q408
Q409
Q410
Q411
Q412

AU-99 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
IC404
IC403
IC402
IC401
Q413
Q427
Q428
Q425
Q426
Q405
Q422
L401
RV402
TP402
R475
R472
C464
C412
C411
C565
C564
C415
C414
C430
C436
C490
C440
C448
C425

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MC-63 (MIC AMP), SW-168 (CAMERA REC SWITCH) PRINTED WIRING BOARDS

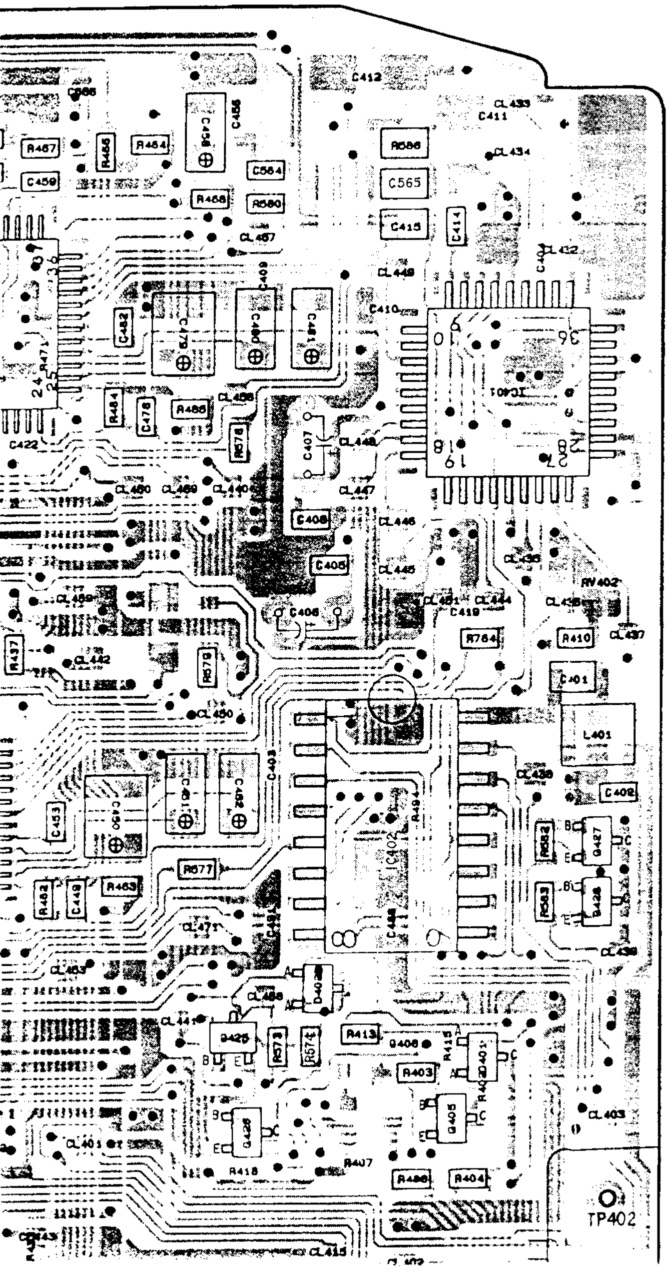
168 BOARDS : 6000 series—

< IC >

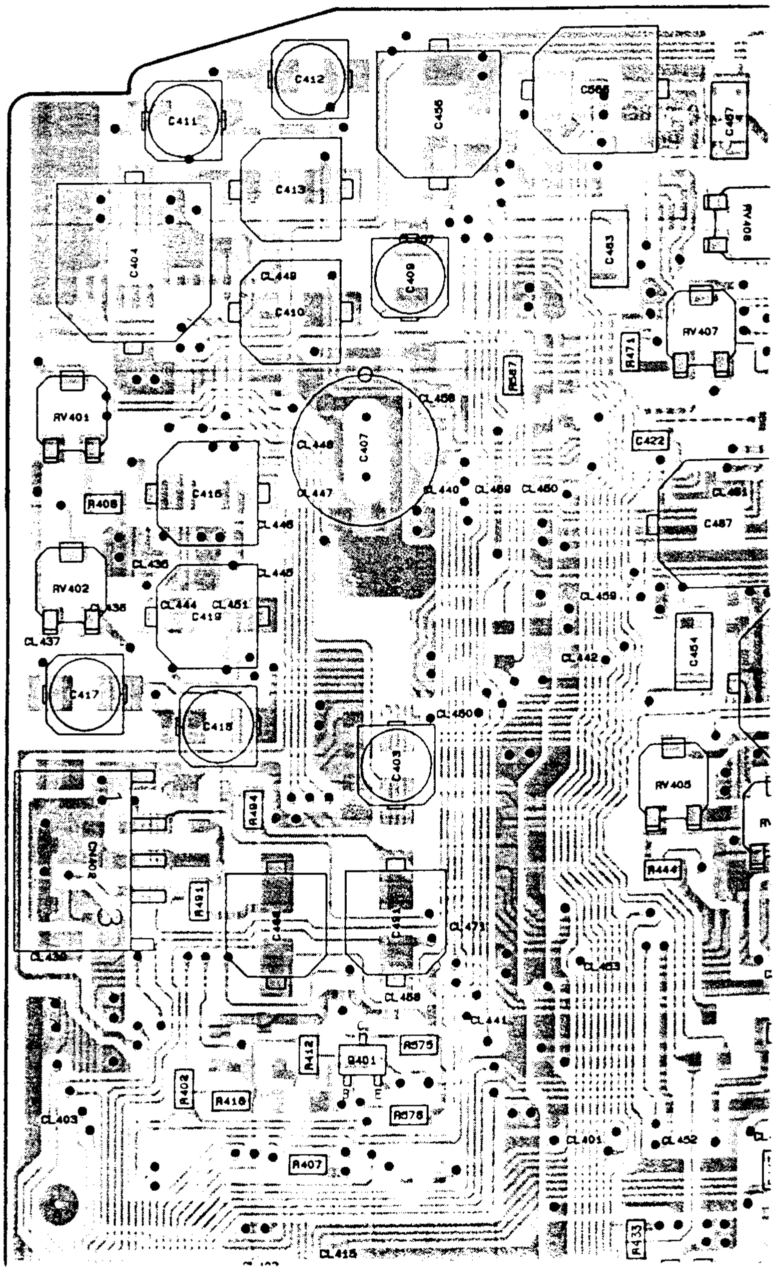
IC401	8-759-823-21	CXA-1536Q
IC402	8-759-009-22	MC14094BF
IC403	8-759-823-19	CXA-1488R
IC404	8-759-823-19	CXA-1488R
IC405	8-759-300-71	HD140538F
IC406	8-759-008-67	MC14066BF

< TRANSISTOR >

Q401	8-729-905-12	DTA144EU
Q402	8-729-905-18	DTC144EU
Q403	8-729-905-12	DTA144EU
Q404	8-729-905-23	2SA1576-R
Q405	8-729-905-23	2SA1576-R
Q408	8-729-907-26	IMX1
Q409	8-729-905-35	2SC4081-R
Q410	8-729-907-26	IMX1
Q411	8-729-907-26	IMX1
Q412	8-729-905-18	DTC144EU
Q413	8-729-905-23	2SA1576-R
Q414	8-729-905-23	2SA1576-R
Q415	8-729-905-35	2SC4081-R
Q416	8-729-905-23	2SA1576-R
Q417	8-729-905-35	2SC4081-R
Q419	8-729-905-18	DTC144EU
Q425	8-729-905-18	DTC144EU
Q426	8-729-905-18	DTC144EU
Q427	8-729-905-35	2SC4081-R
Q428	8-729-905-35	2SC4081-R

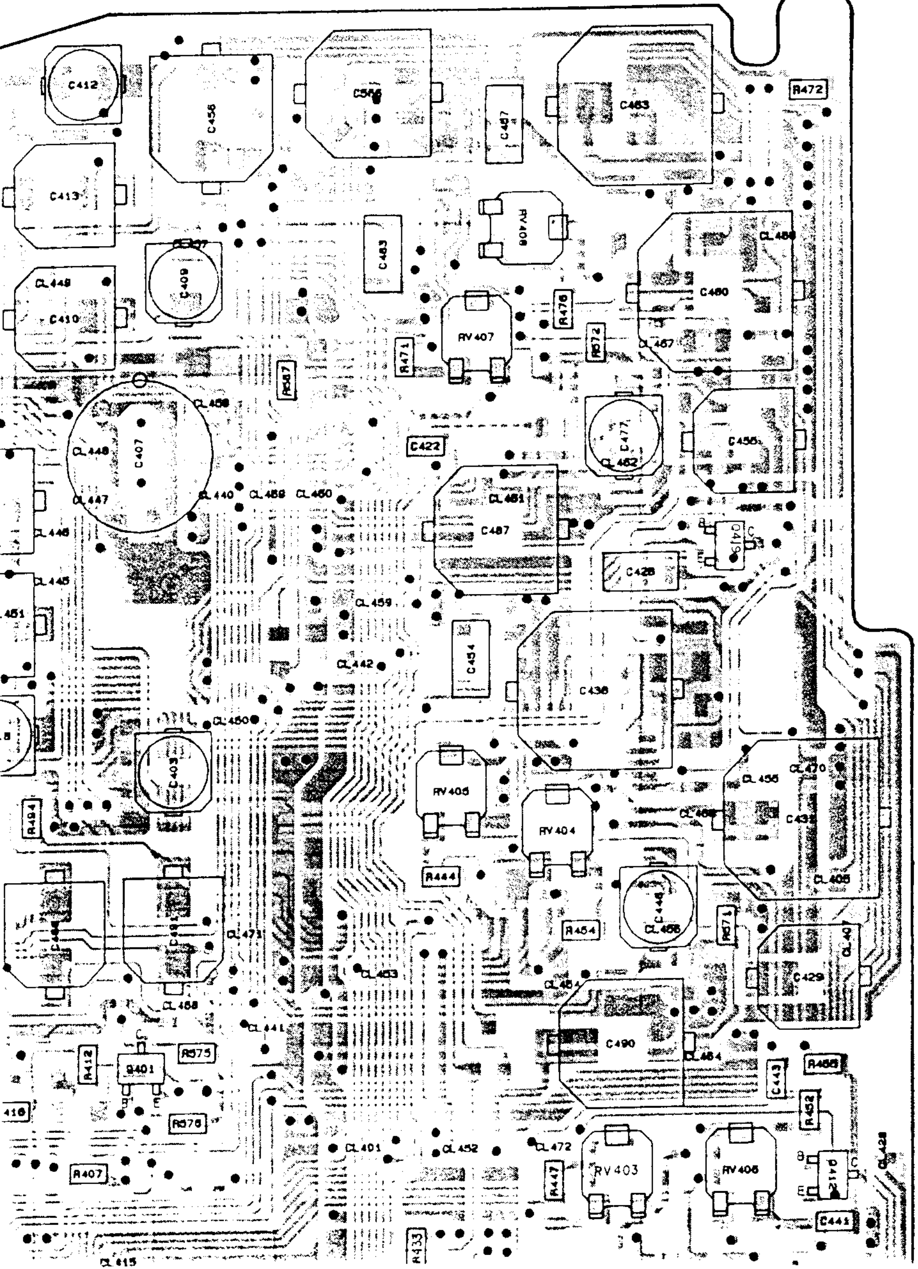

C412
C411
R586
C565
C415
C414
C458
C456
C564
R580
R487
R455
R454
C459
R458
C460
C461
C473
C462
IC401
C407
C408
C405
C406
R764
R410
C401
L401
C403
IC402
C402
Q427
Q426
R583
C453
C450
C451
C452
R677
R482
C449
R463
Q425
R573
R574
R413
Q408
R403
Q405
Q428
R418
R486
R404
RV402
TP402

AU-99 BOARD (CONDUCTOR SIDE)


C412
C411
C456
C566
C457
C413
IC404
RV406
C463
C409
C410
RV407
R471
R567
RV401
C407
C422
R408
C416
C487
RV402
C419
C454
C417
C415
C403
RV405
R494
R491
C444
R444
R412
Q401
R575
R402
R416
R576
R407
R433

13	8-729-905-23	2SA1576-R
14	8-729-905-23	2SA1576-R
15	8-729-905-35	2SC4081-R
16	8-729-905-23	2SA1576-R
17	8-729-905-35	2SC4081-R
19	8-729-905-18	DTC144EU
25	8-729-905-18	DTC144EU
26	8-729-905-18	DTC144EU
27	8-729-905-35	2SC4081-R
28	8-729-905-35	2SC4081-R

CONDUCTOR SIDE)



C412
C456
C566
C487
C483
R472
C413
RV408
C453
CL486
C409
CL448
C410
C480
RV407
R476
R472
R471
R587
CL467
C477
C462
CL450
C407
C422
C458
CL446
CL447
CL440
CL458
CL460
CL481
C487
Q410
C428
CL445
CL459
C454
CL442
C436
CL450
C403
RV405
RV404
CL456
CL470
C435
CL465
R494
R444
C446
CL466
CL405
R454
R471
CL40
CL473
CL453
C429
CL488
CL464
C490
CL484
CL441
R412
Q401
R575
C443
R466
R576
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CL401
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RV406
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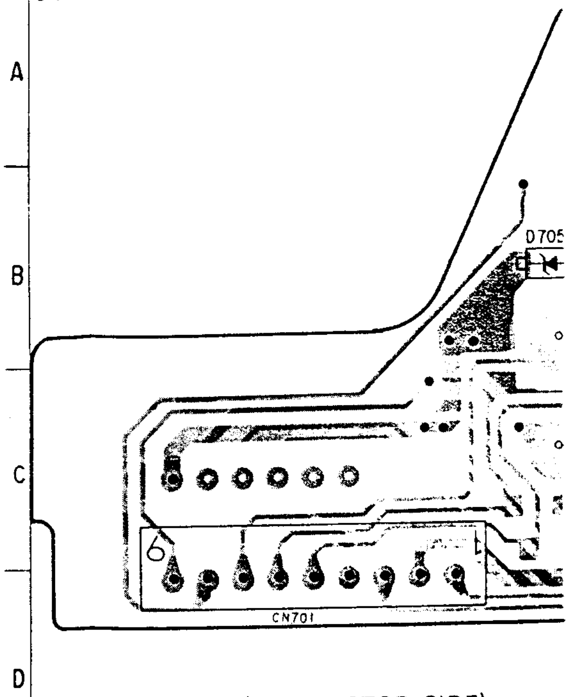
C441
R433
CL415

SW-168 BOARD (COMPONENT SIDE)



A
B
C
D
D705
6
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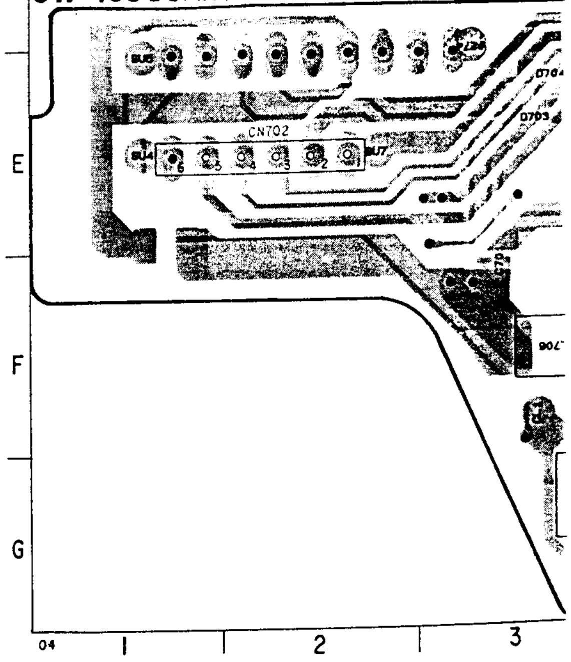
CN701

SW-168 BOARD (CONDUCTOR SIDE)



E
F
G
BU6
D704
D703
CN702
BU4
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4
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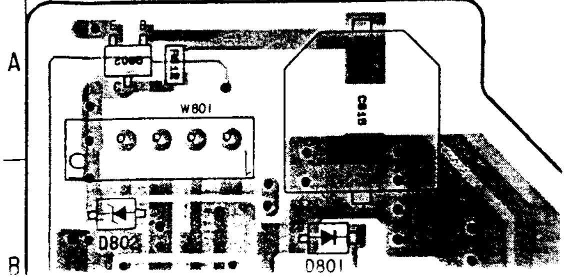
BU7
D70
906
04
1
2
3

MC-63 BOARD (COMPONENT SIDE)



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W801
C818
D802
D801

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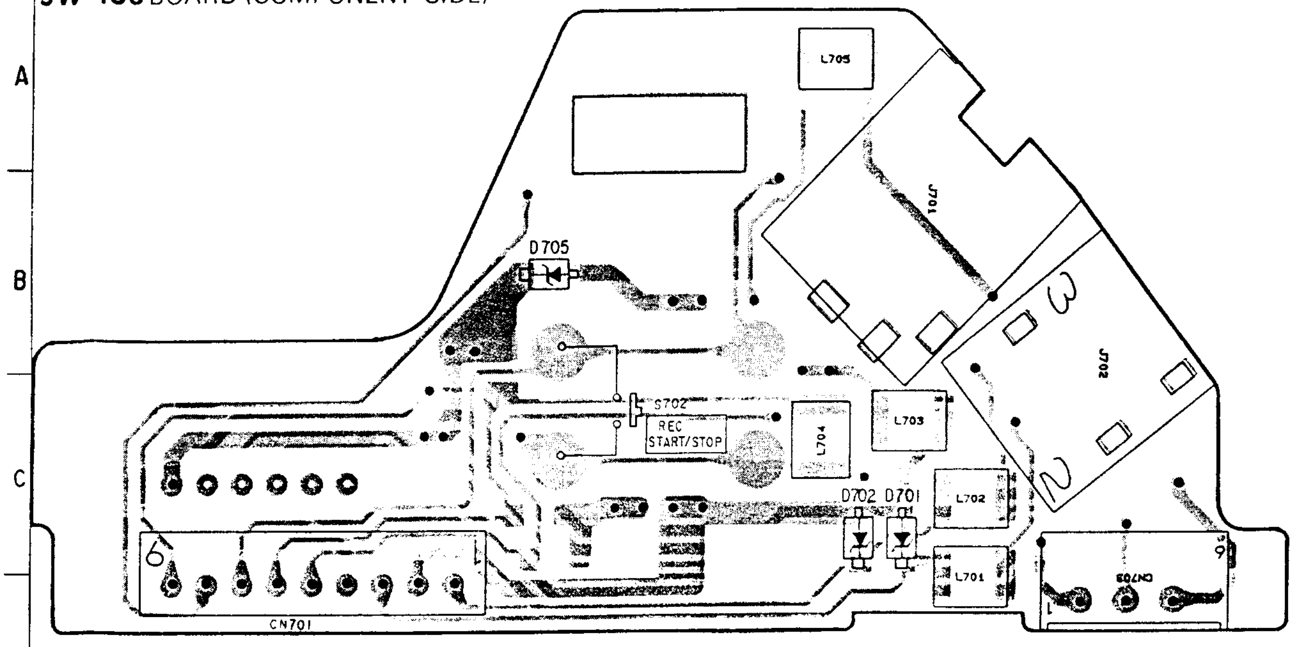
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C
L705
J701
J702
D705
S702
REC START/STOP
L704
L703
L702
D702
D701
L701
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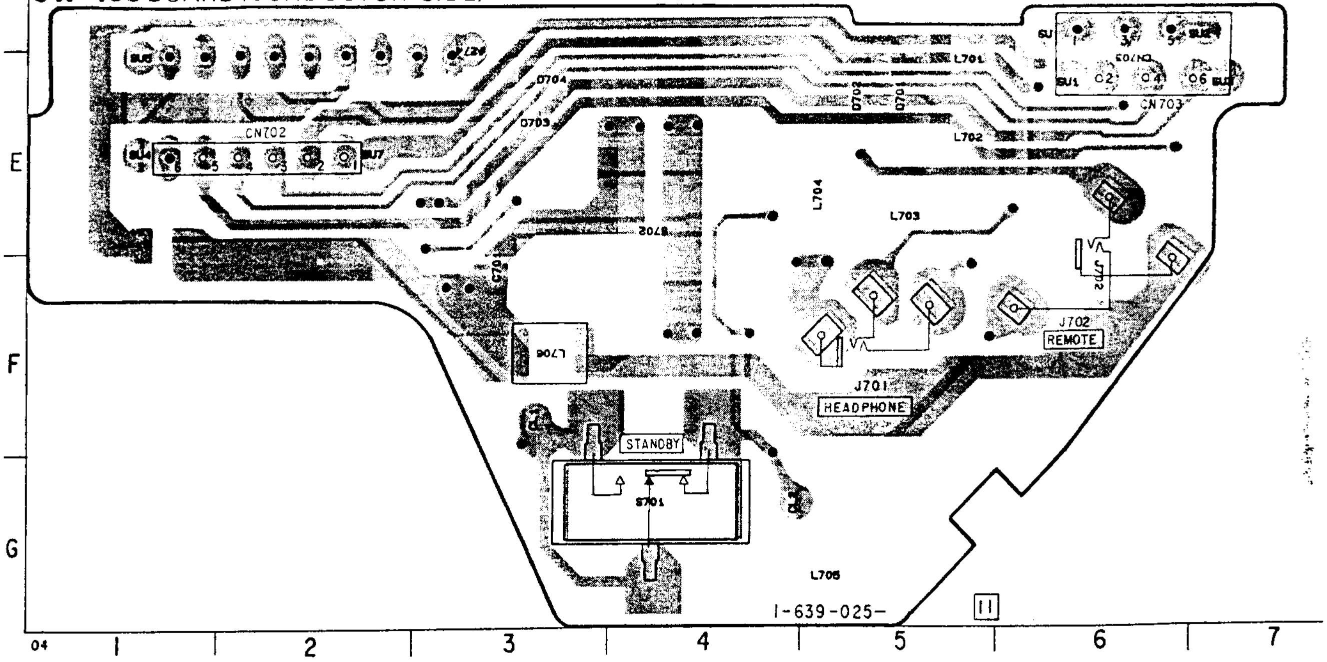
2
D

SW-168 BOARD (CONDUCTOR SIDE)


E
F
G
CN703
CN702
L701
L702
D704
D703
D702
D701
L704
L703
S702
D705
L706
J702
REMOTE
J701
HEADPHONE
STANDBY
S701
L705
1-639-025-
11
04
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5
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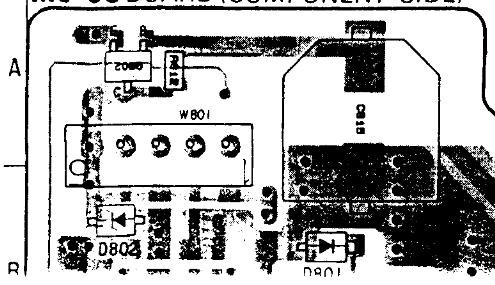
7

MC-63 BOARD (COMPONENT SIDE)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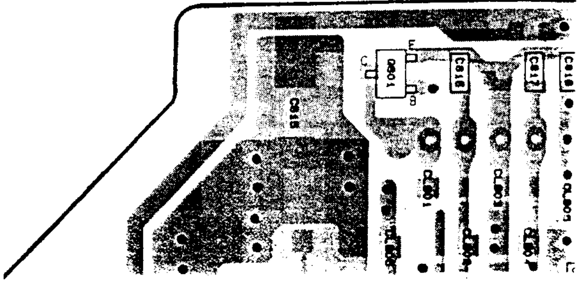
C818
D802
D801

MC-63 BOARD (CONDUCTOR SI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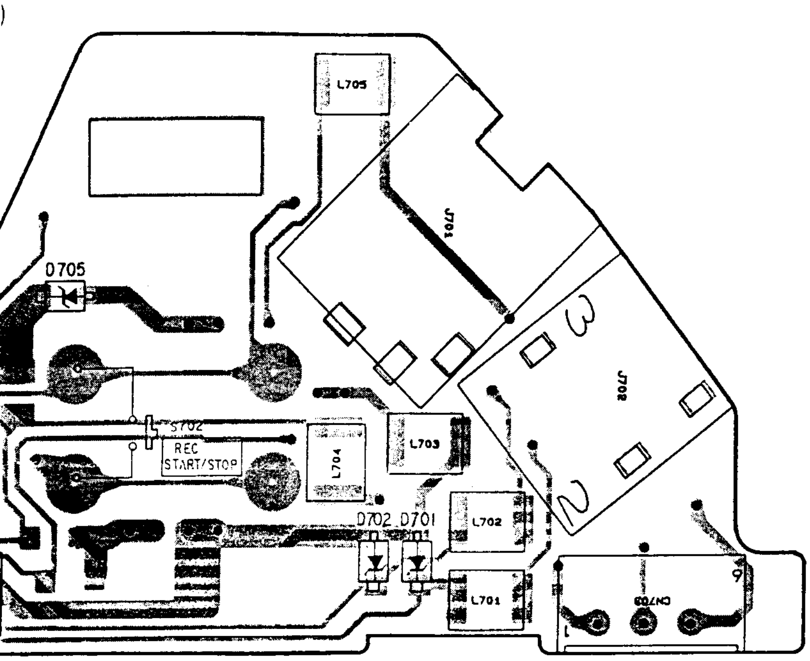
D801
C
E
B


L705
J701
D705
3
J702
S702
REC START/STOP
L704
L703
2
L702
D702 D701
L701
CN703
6
1

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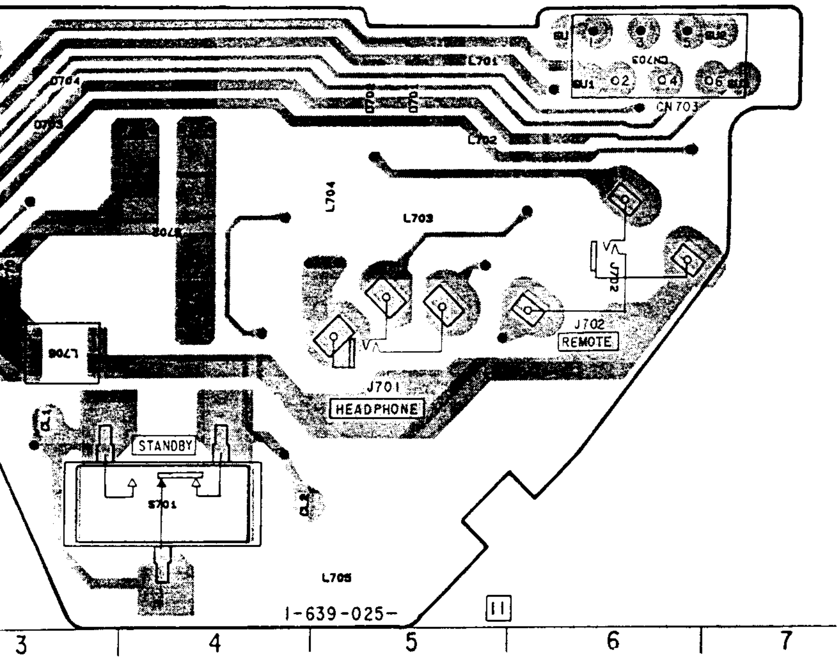
D702	8-719-977-34	DTZ12
D705	8-719-977-34	DTZ12


L701
D704
D703
CN703
1 3 5
2 4 6
L702
L704
L703
J702
J702
REMOTE
L706
J701
HEADPHONE
STANDBY
S701
L705
1-639-025-
11
3
4
5
6
7

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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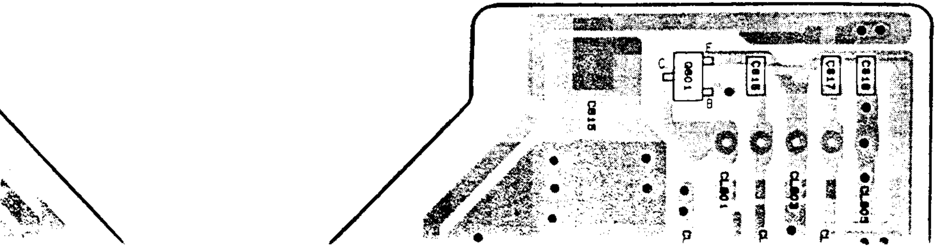
Email:- enquiries@mauritron.co.uk

MC-63 BOARD (CONDUCTOR SIDE)


Q801
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E
B
C818
C817
C819
C815
CL801
CL803
CL805

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D802	8-719-977-22	DTZ9.1-TT11
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Q801	8-729-905-18	DTC144EU

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D702	8-719-977-34	DTZ12
D705	8-719-977-34	DTZ12

< DIODE >

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D802	8-719-977-22	DTZ9.1-TT11

< IC >

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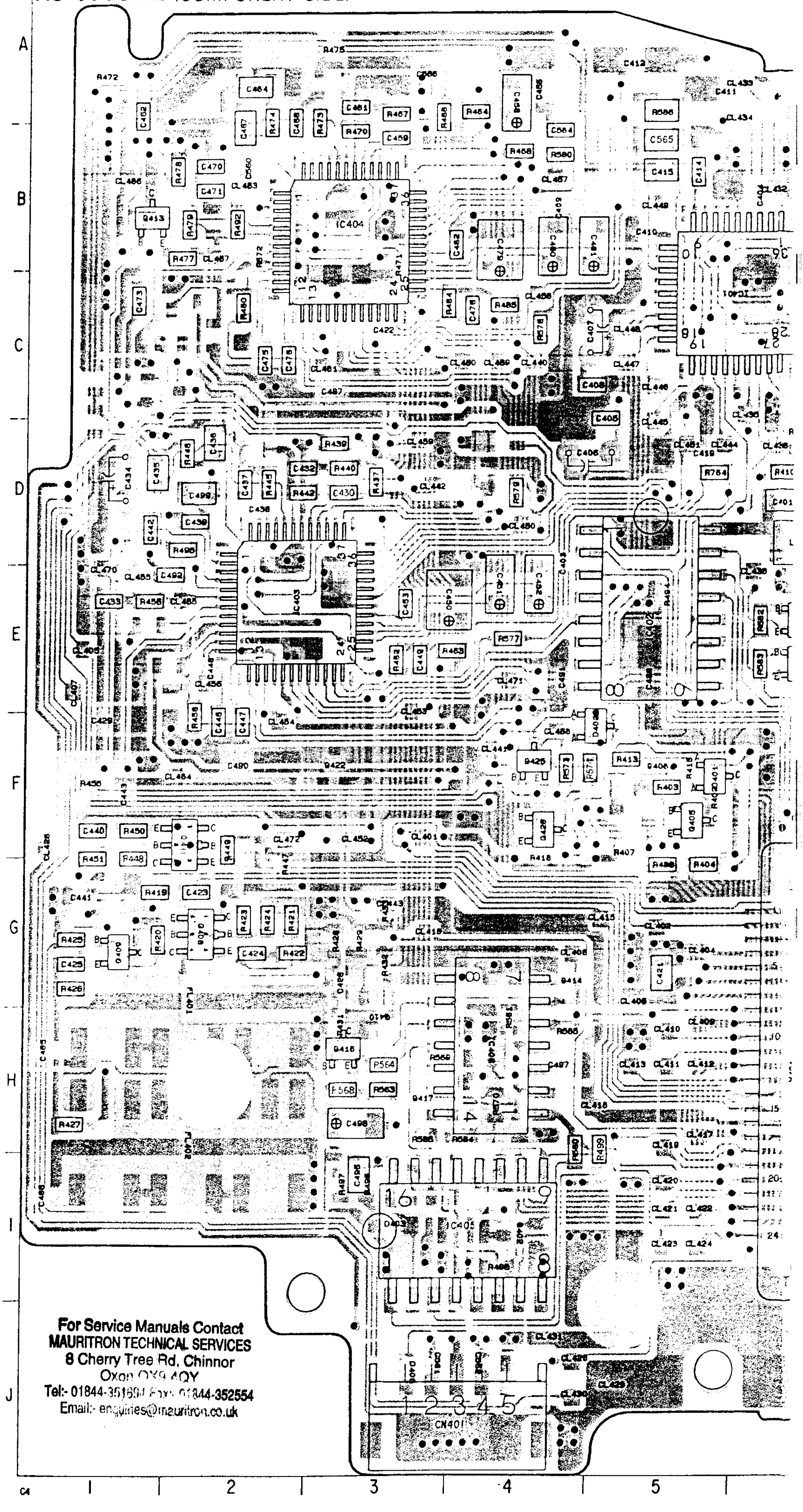
AU-99 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
1
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3
4
5
IC404
IC403
CN401
FL401
FL402
Q413
Q401
Q405
Q408
Q409
Q416
Q417
Q425
Q426
D401
D403
C401
C402
C405
C409
C450
C451
C452
C498
R477
R478
R479
R480
R492
R494
R577
R578
R579
R586
R499
C430
C433
C435
C436
C438
C439
C440
C442
C492
C499
R440
R442
R445
R446
R448
R450
R451
R456
R419
R420
R421
R422
R423
R424
R425
R426
R427
C423
C424
C425
R403
R404
R413
C414
C415
C565
R580
R584
R588
C484
C461
R457
R470
R474
R473
R475
R472
C470
C471
1 2 3 4 5

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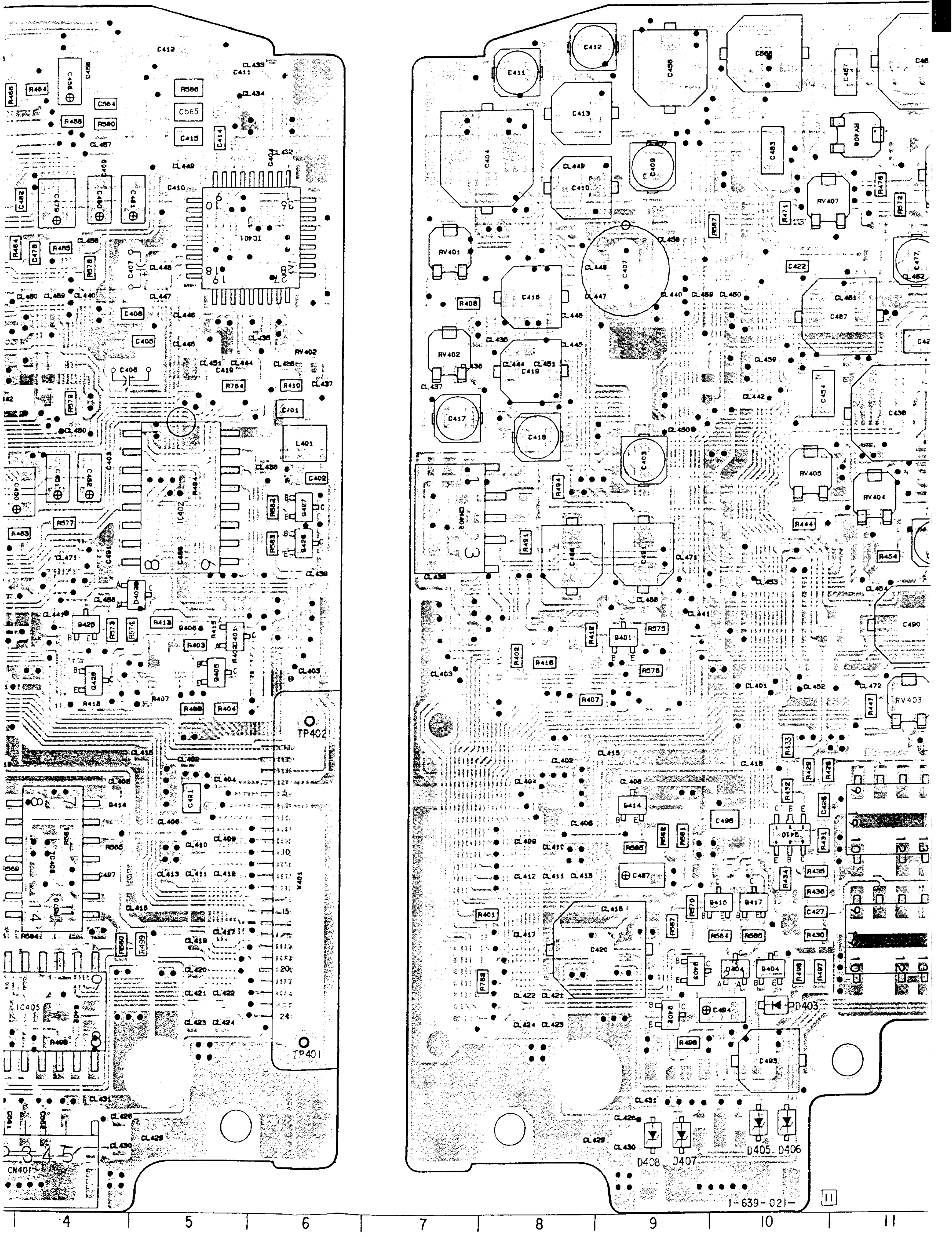
AU-99 BOARD (CONDUCTOR SIDE)


IC401
IC402
IC405
IC408
CN401
CN402
W401
TP401
TP402
L401
RV401
RV402
RV403
RV404
RV405
RV406
RV407
C407
C412
C411
C413
C404
C409
C410
C416
C419
C417
C418
C403
C420
C421
C490
C493
C494
C496
C497
Q401
Q403
Q404
Q405
Q406
Q410
Q414
Q415
Q417
Q425
Q426
Q427
Q428
D403
D405
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D407
D408
1-639-021-
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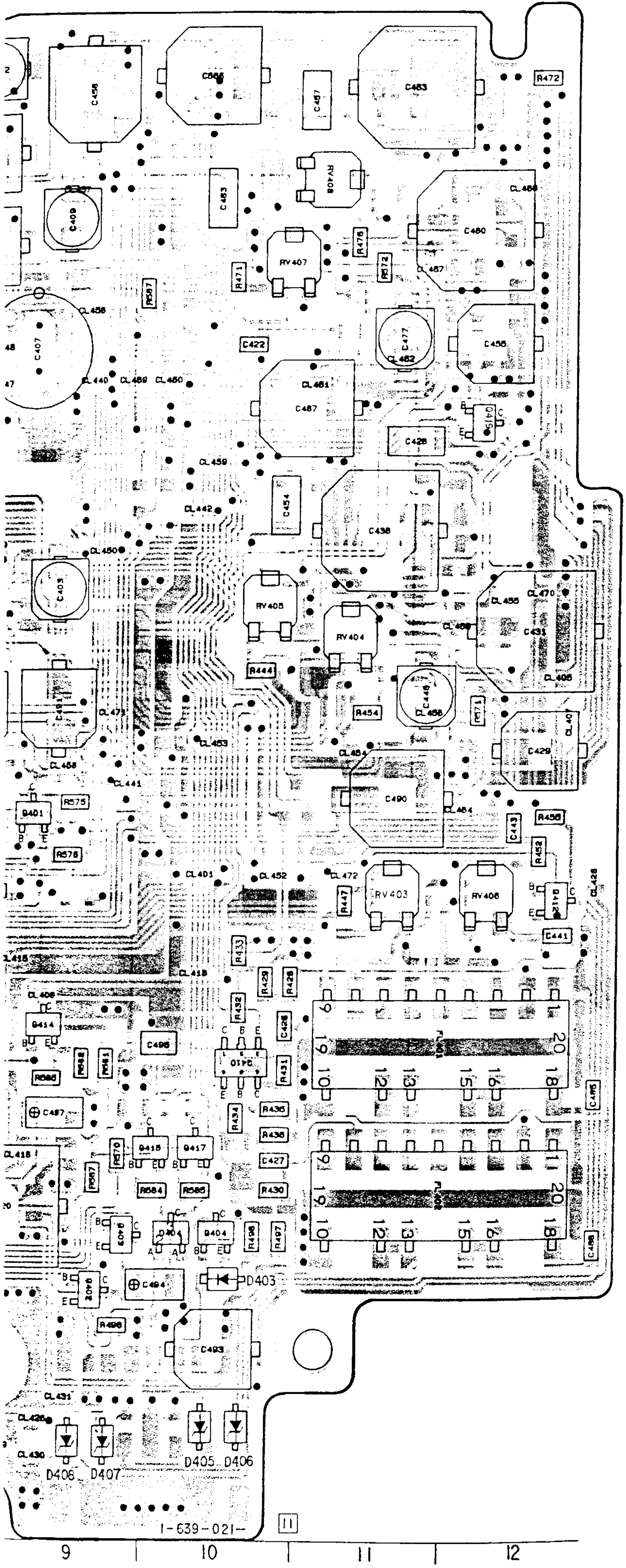
8
9
10
11

CTOR SIDE)



C456
C566
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C483
R472
RV408
C453
C409
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CL488
RV407
R471
R476
R572
C487
R567
CL456
C407
C422
C477
C462
C455
CL440
CL489
CL460
CL461
C487
Q419
C428
CL459
C454
C438
CL442
CL450
C403
RV405
RV404
CL455
CL470
C431
R444
C448
CL458
R454
R471
C429
C481
CL473
CL453
CL454
C490
CL464
R456
C443
Q401
R575
R576
CL441
R452
CL401
CL452
CL472
RV403
RV406
Q412
C441
R447
R433
CL415
CL418
R429
R428
CL408
Q414
C496
R432
C426
Q410
R431
R434
R436
R435
C427
R430
C497
R570
Q415
Q417
R567
R584
R585
C495
Q403
D404
Q404
R496
R497
C486
Q406
C494
D403
R498
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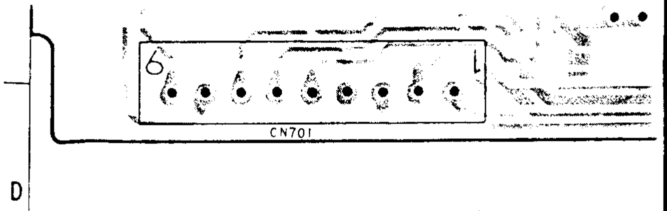
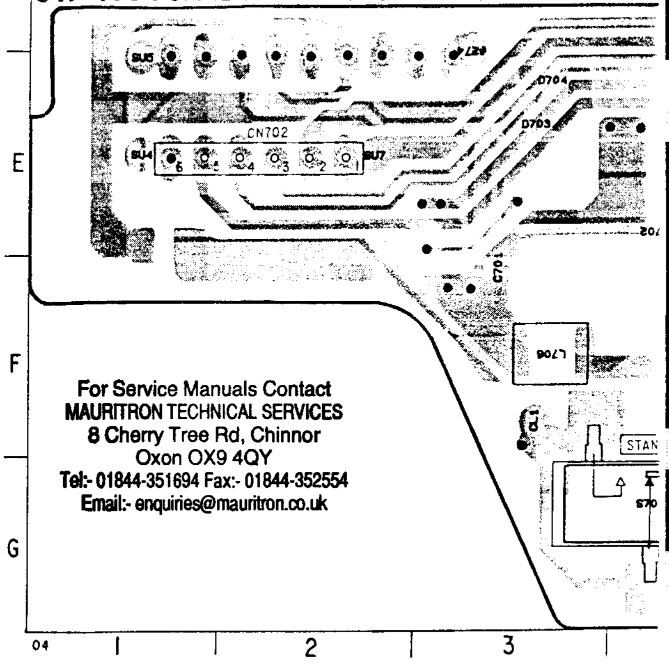
12



SW-168 BOARD (CONDUCTOR SIDE)



SU5
CN702
SU4
SU7
D704
D703
C701
L706
CL1
STAN
S70
E
F
G
04
1
2
3

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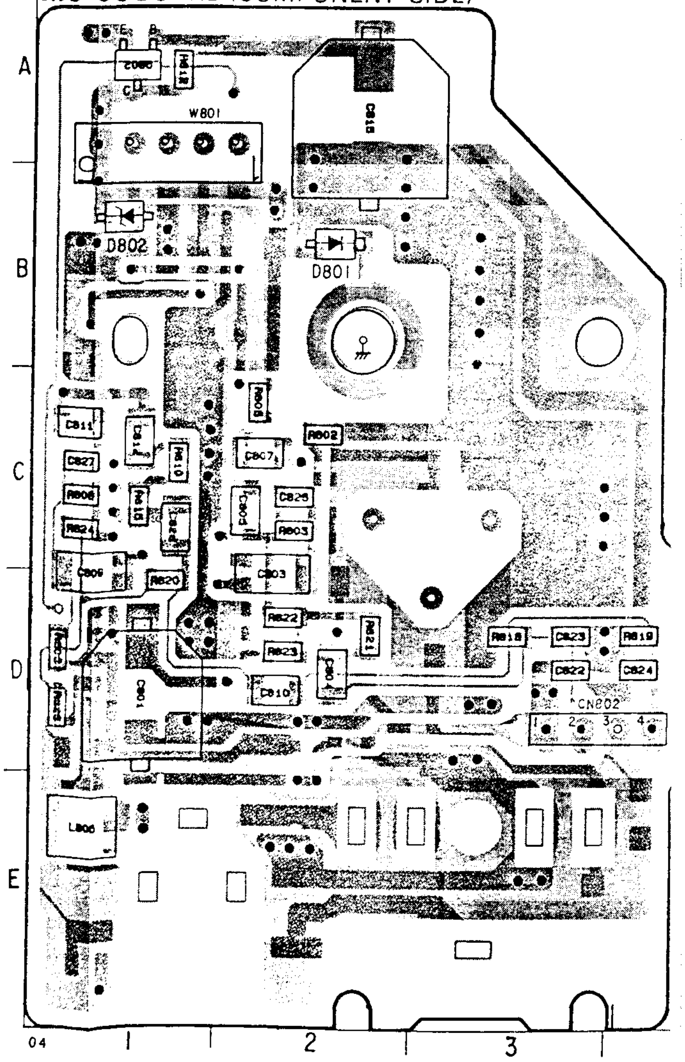
MC-63 BOARD (COMPONENT SIDE)



A
B
C
D
E
Q801
R818
W801
C815
D802
D801
R805
C811
C814
R810
C807
R802
C827
R808
R815
C805
C826
R824
R803
C809
R820
C803
R822
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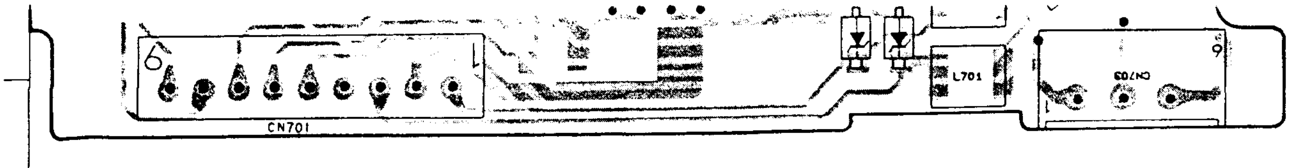
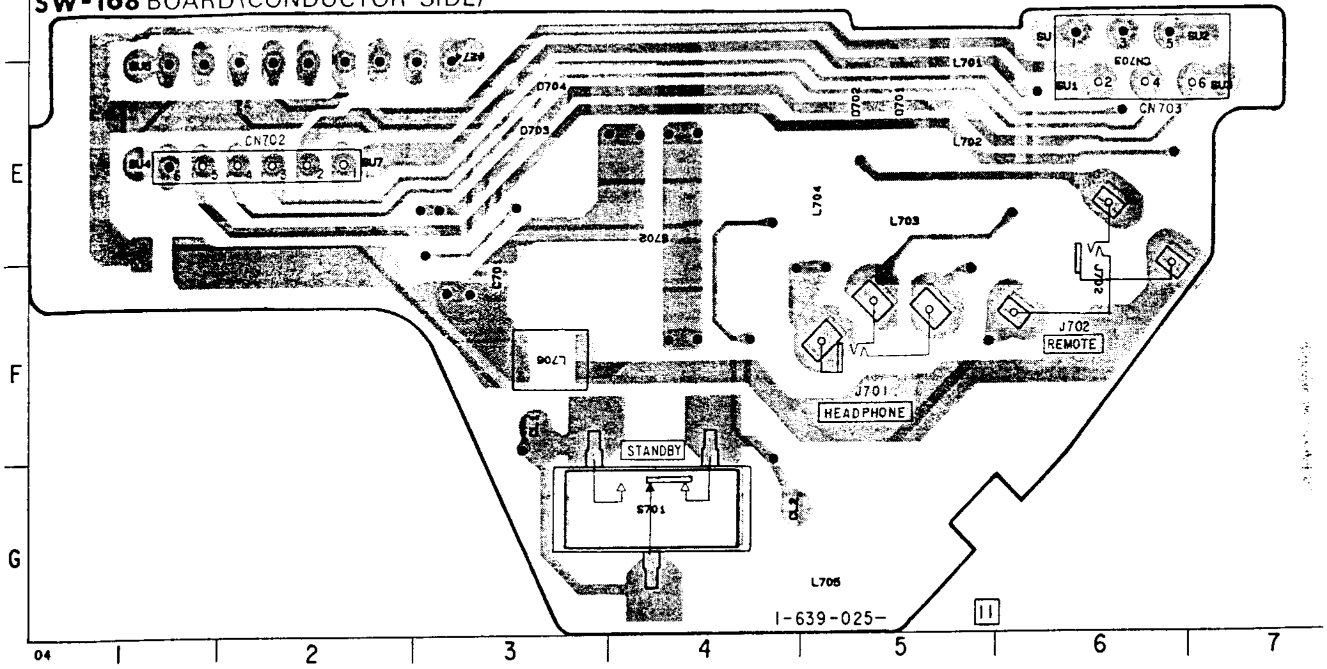
L806
04
1
2
3


CN701
L701
CN703
D

SW-168 BOARD (CONDUCTOR SIDE)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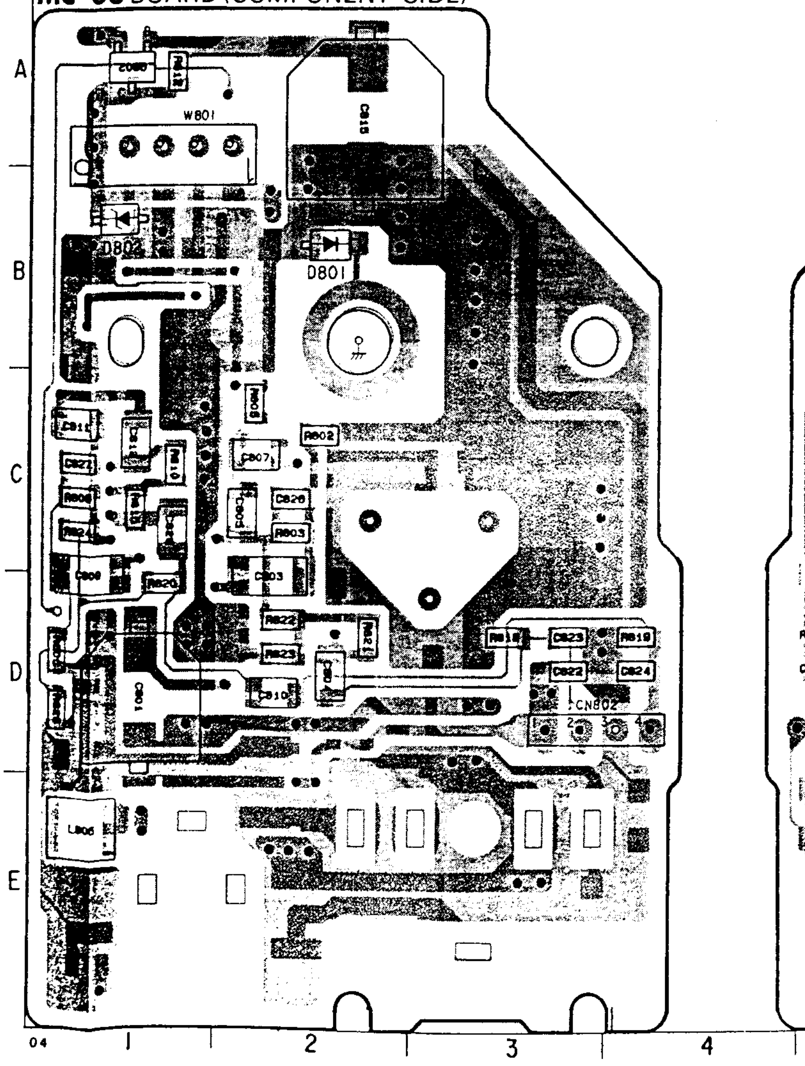
CN703
SU1
SU2
SU4
SU7
L701
L702
L703
L704
L705
L706
D701
D702
D703
D704
J701
HEADPHONE
J702
REMOTE
STANDBY
S701
1-639-025-
11
E
F
G
04
1
2
3
4
5
6
7

MC-63 BOARD (COMPONENT SIDE)


W801
D801
D802
C815
R802
R805
C807
C826
R803
C803
R822
R823
C810
R818
C823
R819
C822
C824
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L806
A
B
C
D
E
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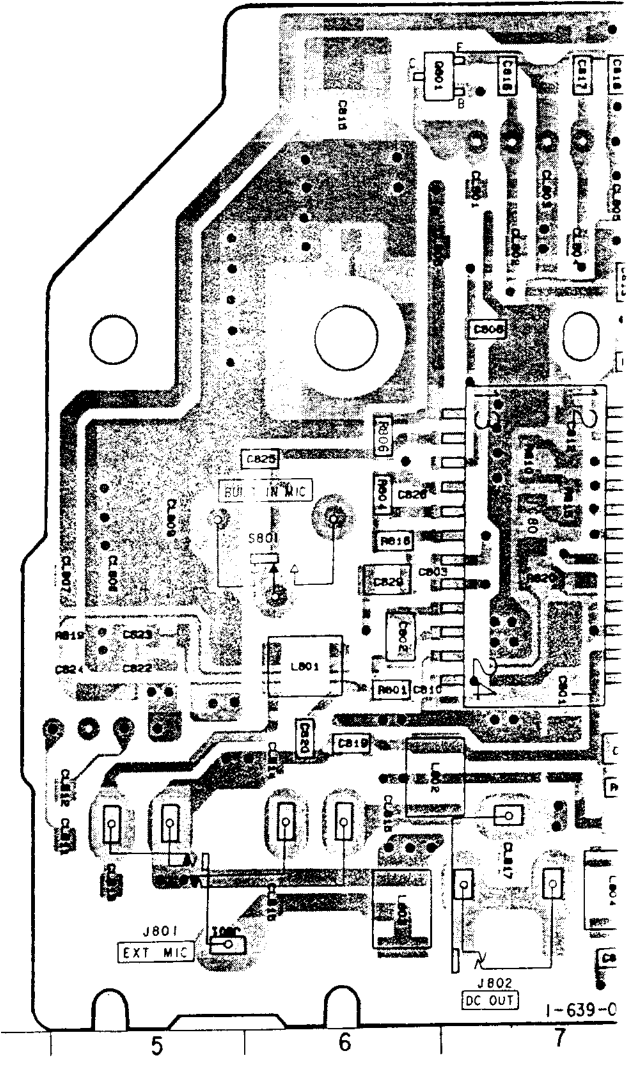
1
2
3
4

MC-63 BOARD (CONDUCTOR SI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C816
C817
C808
R806
C825
BUILT IN MIC
S801
C826
R816
C829
C803
R819
C823
C824
C822
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R801
C810
C819
L802
J801
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J802
DC OUT
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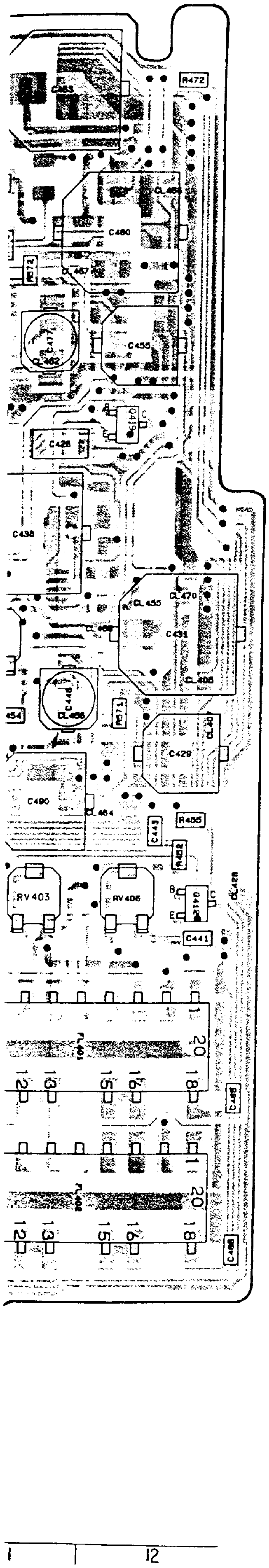
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CL455
C470
C431
CL466
CL405
C429
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R452
RV403
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FL401
FL402
C496
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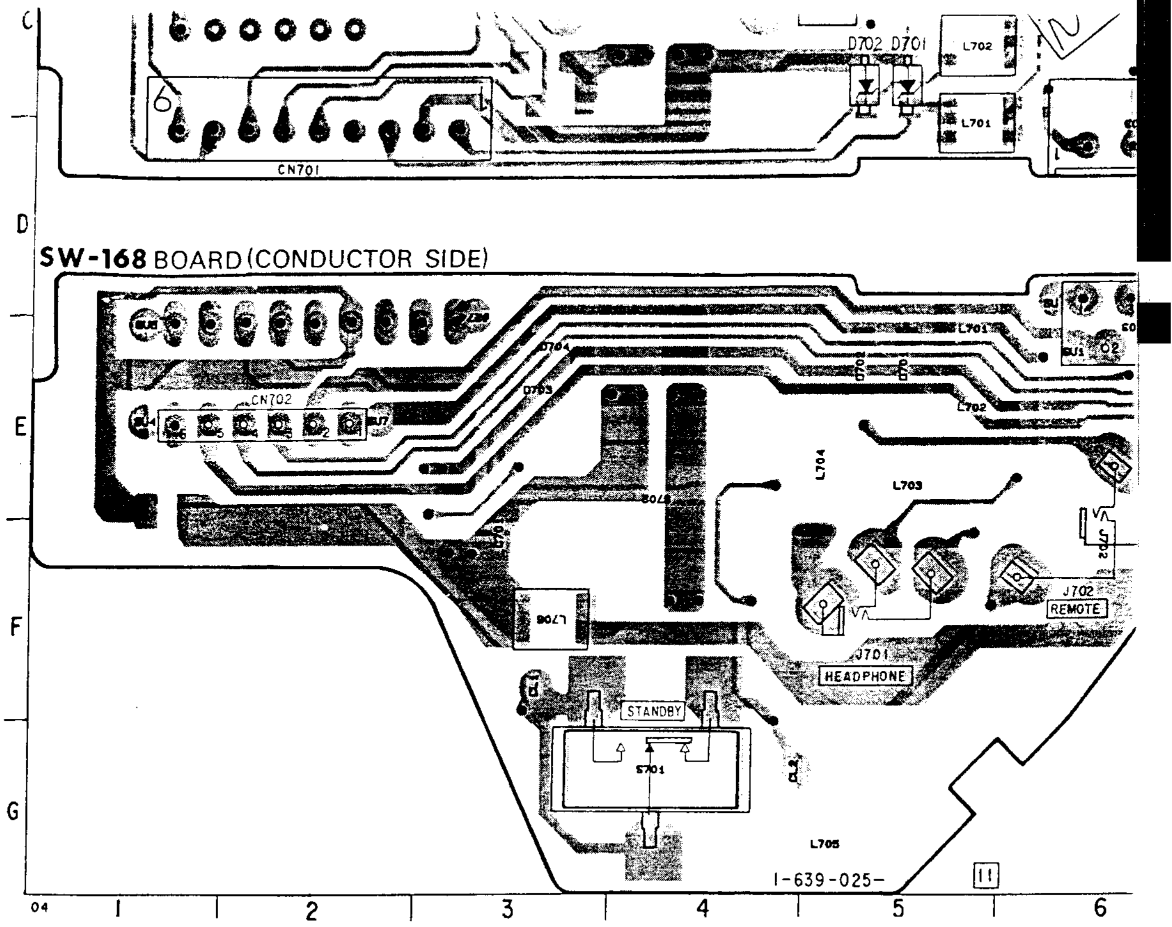
SW-168 BOARD (CONDUCTOR SIDE)


CN701
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D701
L702
L701
CN702
D704
D703
L704
L703
L706
J702
REMOTE
J701
HEADPHONE
STANDBY
S701
L705
1-639-025-
11
C
D
E
F
G
1
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3
4
5
6

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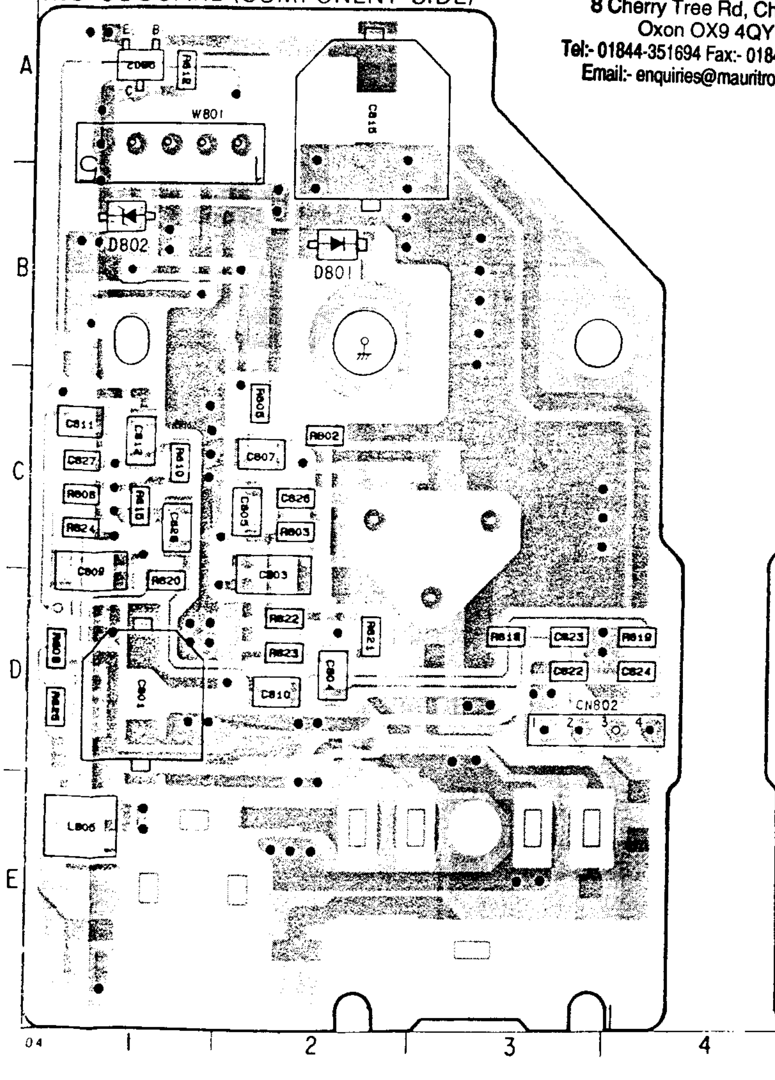
MC-63 BOARD (COMPONENT SIDE)


Q801
R812
W801
C815
D802
D801
C811
C812
R810
C807
R802
R805
C827
R808
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C805
C826
R824
C828
R803
C809
R820
C803
R822
R821
R823
C804
C801
C810
R818
C823
R819
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C824
CN802
L806
A
B
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D
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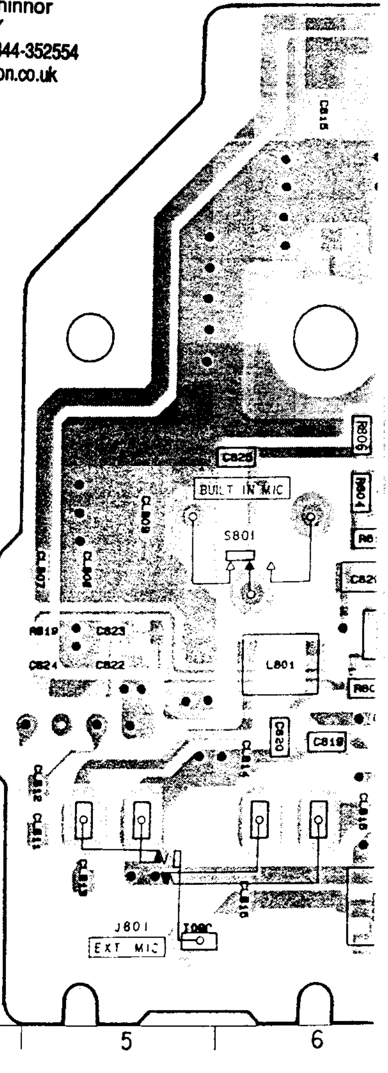
4

MC-63 BOAR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C825
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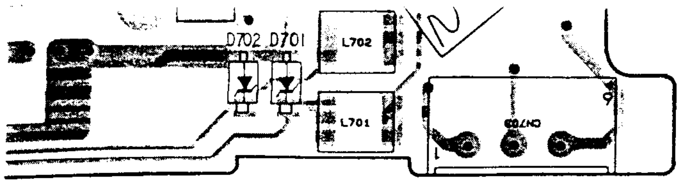
J801
EXT MIC
5
6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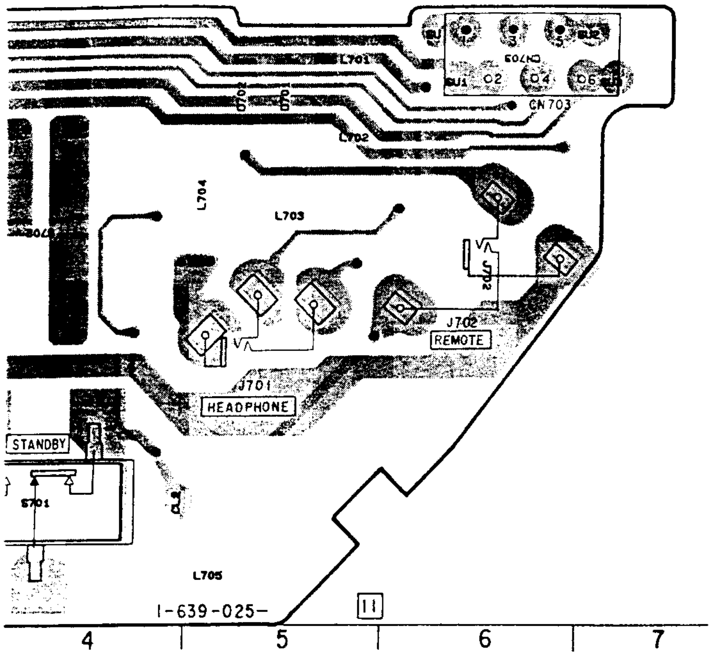
L702
L701
CN703


L701
CN703
D702
D701
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J702
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J701
HEADPHONE
STANDBY
S701
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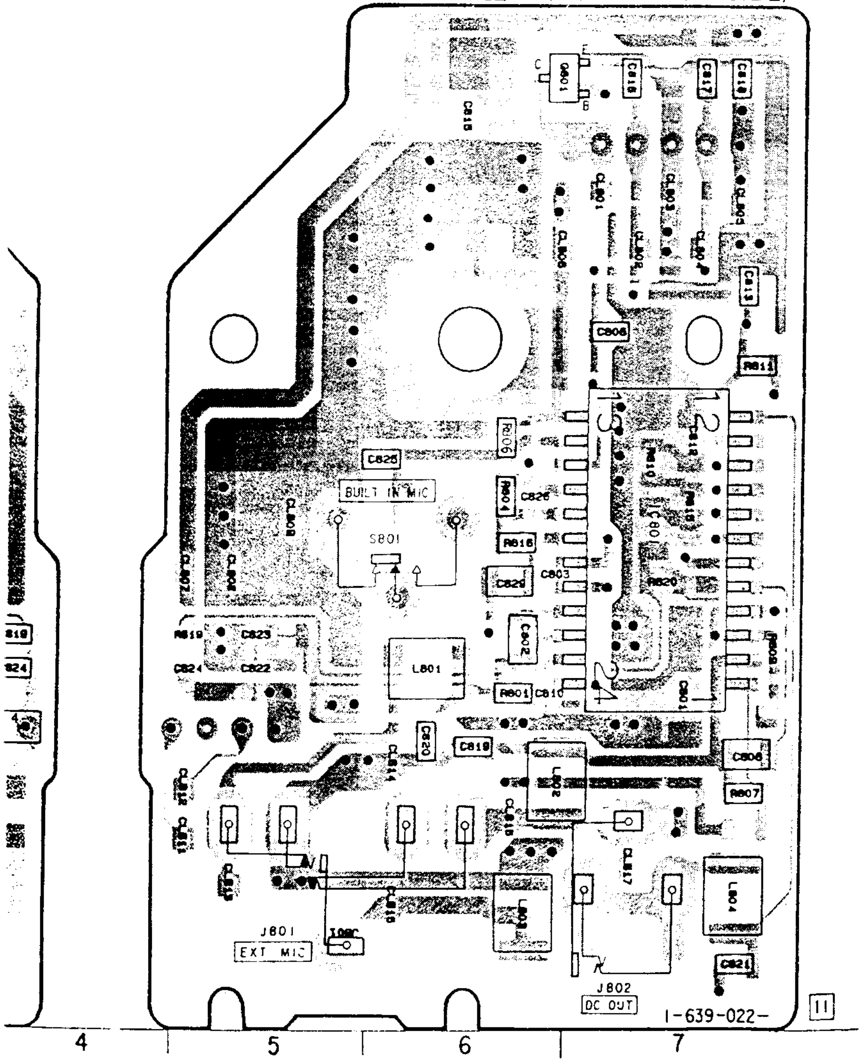
MC-63 BOARD (CONDUCTOR SIDE)


Q801
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C818
C817
C816
C815
CL801
CL806
CL803
CL805
C813
C806
R811
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R806
BUILT IN MIC
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C826
S801
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C829
C803
C802
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R801
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C819
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CL813
CL816
CL815
CL817
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L804
J801
EXT MIC
J802
DC OUT
C821
1-639-022-
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4
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D801	8-719-404-46	MA110-TX
D802	8-719-977-22	DTZ9.1-TT11

< IC >

IC801	8-759-823-42	LA7470M-TEL

< TRANSISTOR >

Q801	8-729-905-18	DTC144EU
Q802	8-729-905-35	2SC4081-R

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< DIODE >		
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D802	8-719-977-22	DTZ9.1-TT11
< IC >		
IC801	8-759-823-42	LA7470M-TEL
< TRANSISTOR >		
Q801	8-729-905-18	DTC144EU
Q802	8-729-905-35	2SC4081-R

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FU-97 (POWER) PRINTED WIRING BOARD

—Ref. No. FU-97 BOARD : 7000 series—

< DIODE >

D101	8-719-981-59	FC805
D102	8-719-981-56	SB05W05C-P
D103	8-719-922-21	AR2222S

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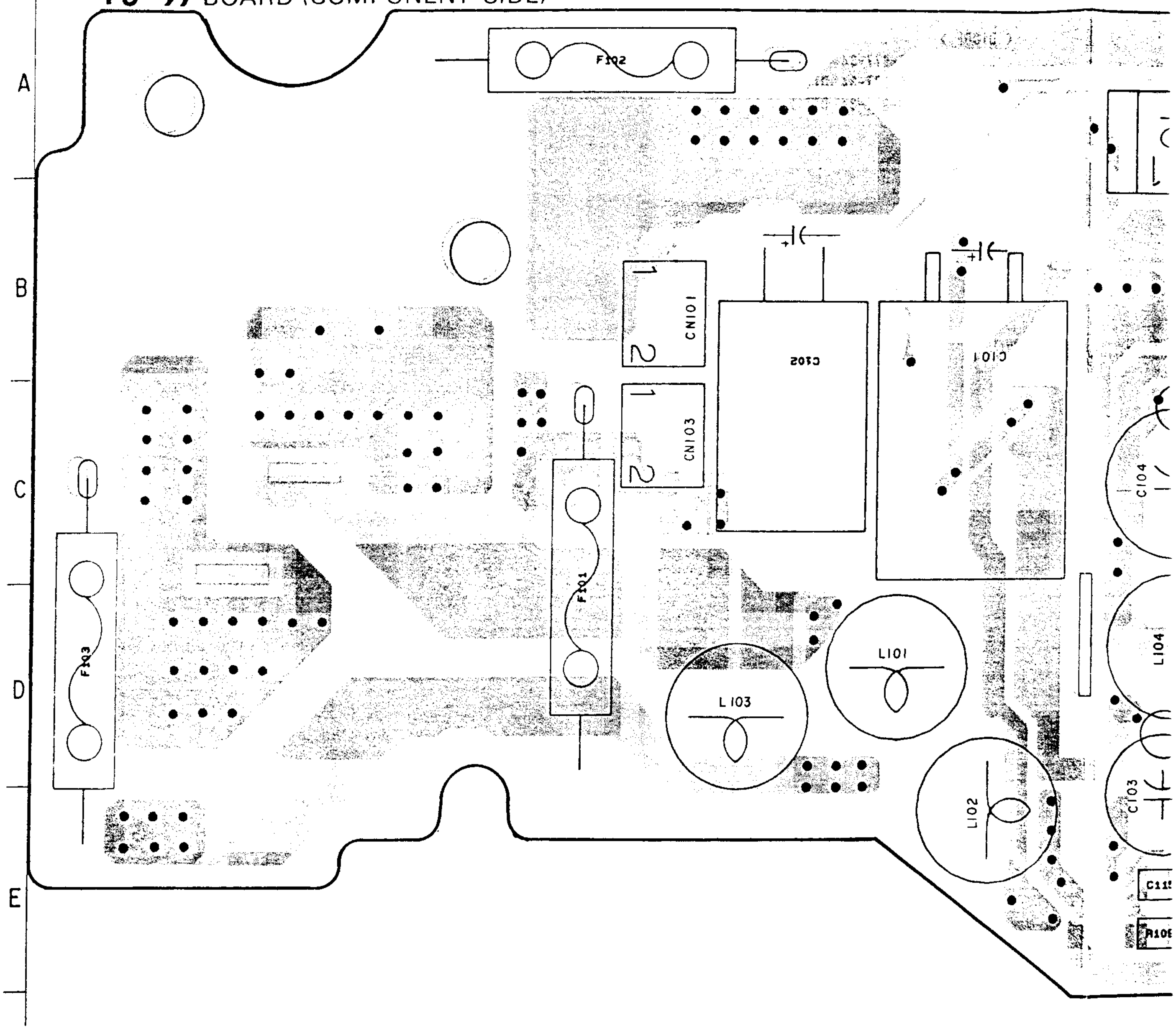
IC101	8-759-035-98	MC141600FU

< TRANSISTOR

Q101	8-72
Q102	8-72
Q103	8-72

FU-97 BOARD (COMPONENT SIDE)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CN103
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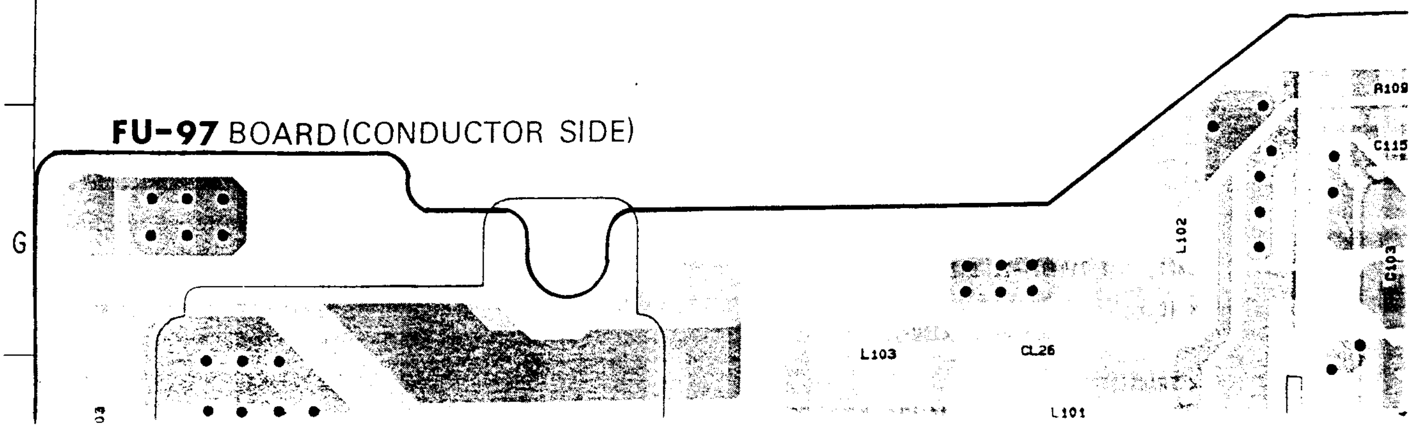
C103
C115
R10

FU-97 BOARD (CONDUCTOR SIDE)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G
R109
C115
L102
C103
L103
CL26
L101

< DIODE >

D101	8-719-981-59	FC805
D102	8-719-981-56	SB05W05C-P
D103	8-719-922-21	AR2222S

< IC >

IC101	8-759-035-98	MC141600FU

< TRANSISTOR >

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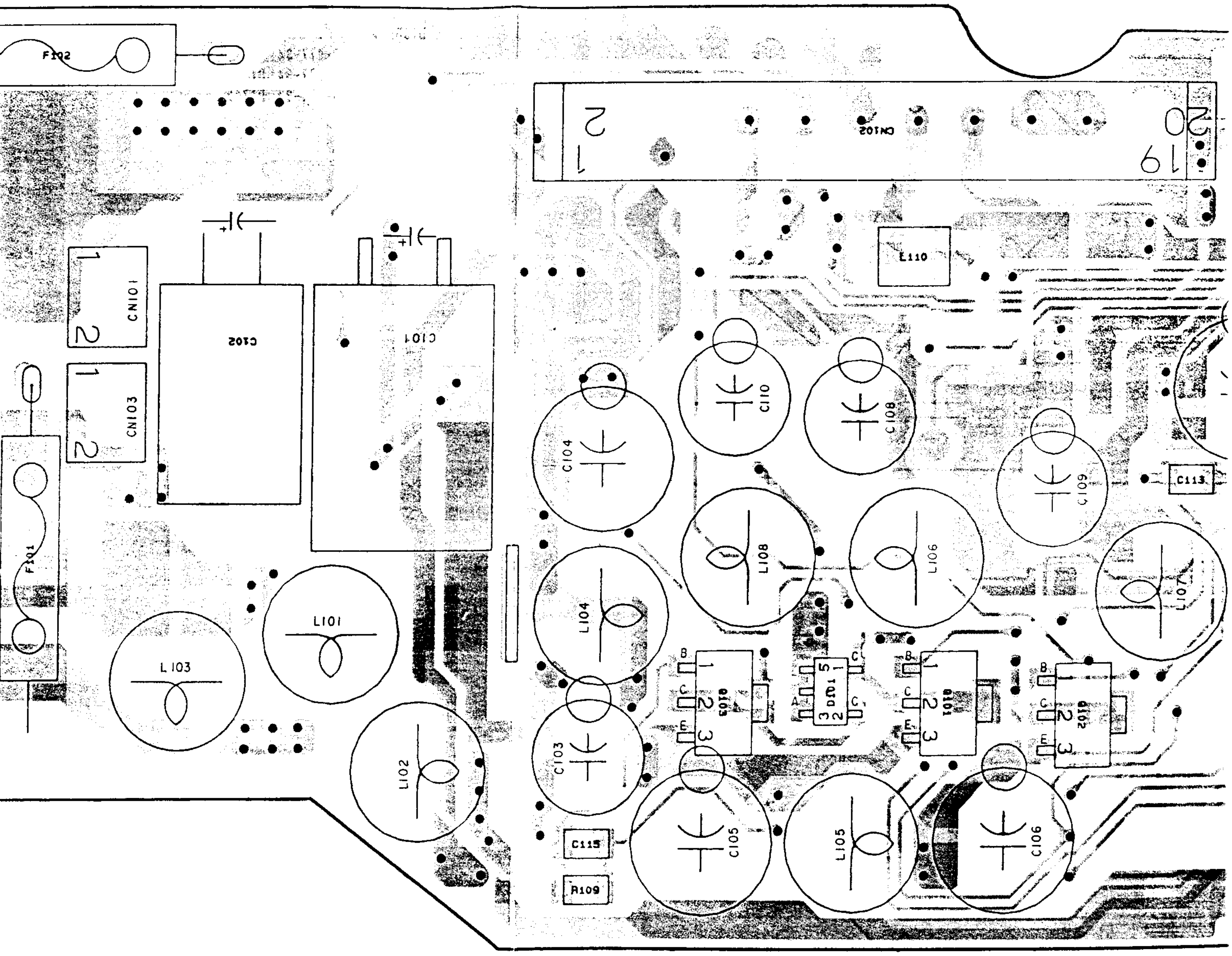
Q102	8-729-822-60	2SB1302
Q103	8-729-805-25	2SB1121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CN102
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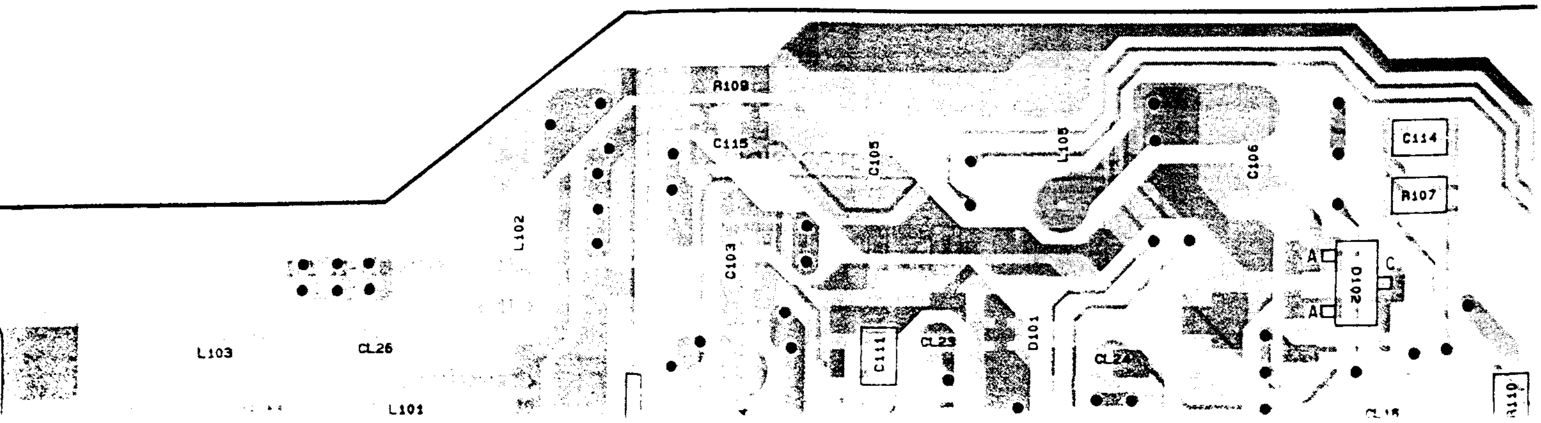
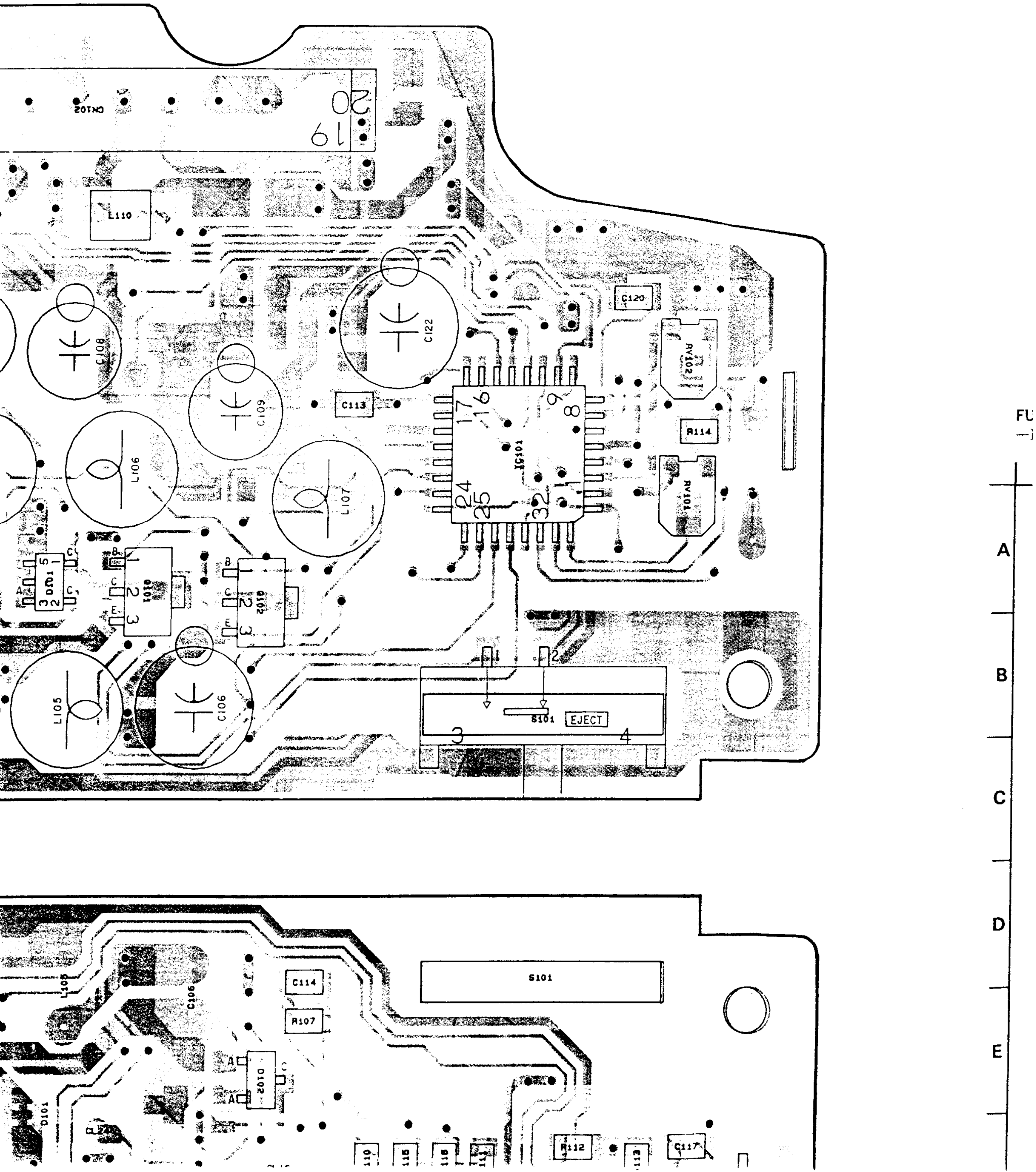
2
19
20
CN101
CN103
C102
C101
L110
C110
C108
C104
C109
C113
F101
L108
L106
L107
L104
L101
L103
L102
C103
C105
L105
C106
Q103
D103
Q101
Q102
B
C
E
A
C115
R109


R109
C115
C105
L105
C106
C114
R107
L102
C103
D102
A
C
D101
C111
CL23
CL24
L103
CL26
L101
CL15
C110


FU
CN102
20
19
L110
C120
C122
C108
C109
C113
RV102
R114
IC101
17
16
9
8
24
25
32
1
RV101
L106
L107
D101
Q101
Q102
B
C
E
A
1
2
3
5
L105
C106
S101
EJECT
4
C114
R107
D102
D101
R112
C117
A
B
C
D
E

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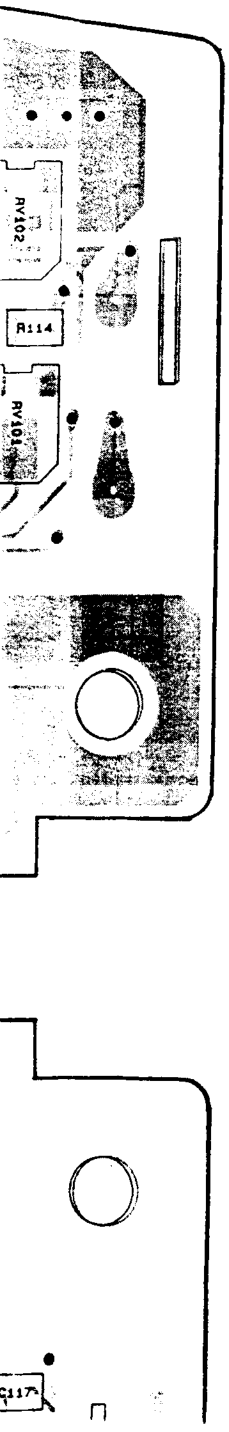
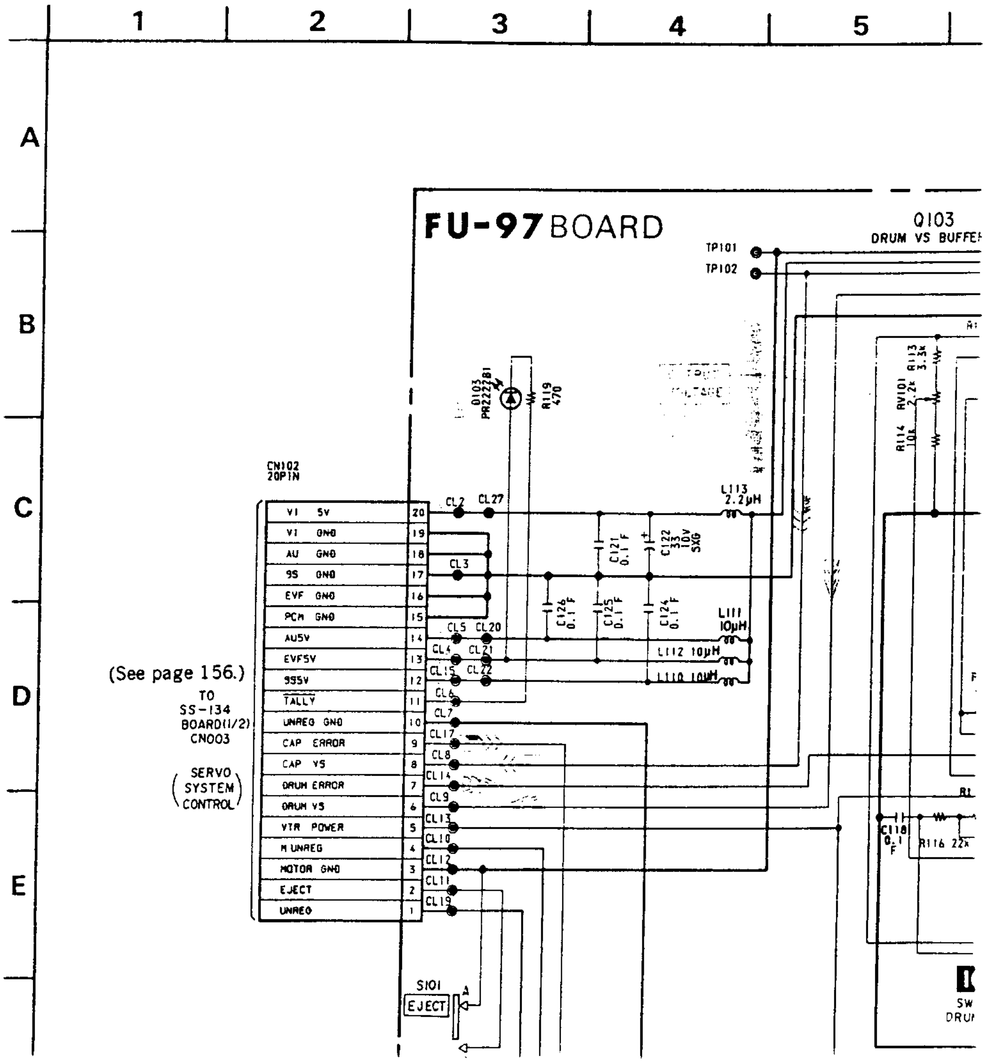

RV102
R114
RV101
C117

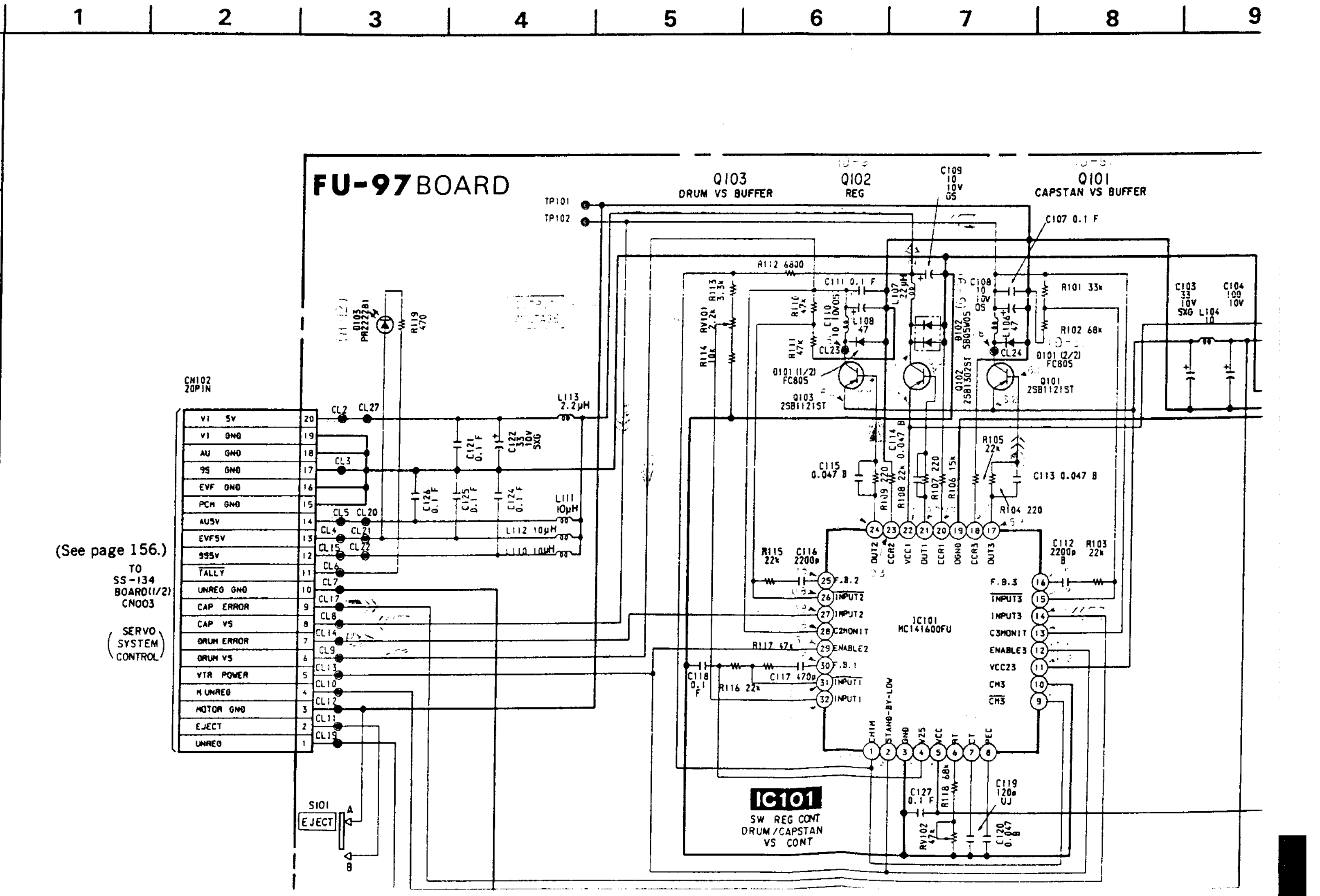
FU-97 (POWER) SCHEMATIC DIAGRAM

—Ref. No. FU-97 BOARD : 7000 series—


1
2
3
4
5
A
B
C
D
E
FU-97 BOARD
Q103
DRUM VS BUFFER
TP101
TP102
D103
PR2227B1
R119
470
R113
3.3k
RV101
2.2k
R114
10k
CN102
20PIN
VI 5V
VI GND
AU GND
9S GND
EVF GND
PCM GND
AU5V
EVF5V
9S5V
TALLY
UNREG GND
CAP ERROR
CAP VS
DRUM ERROR
DRUM VS
VTR POWER
M UNREG
MOTOR GND
EJECT
UNREG
CL2
CL27
CL3
CL5
CL20
CL4
CL21
CL15
CL22
CL6
CL7
CL17
CL8
CL14
CL9
CL13
CL10
CL12
CL11
CL19
C121
0.1 F
C122
33
10V
5XG
C126
0.1 F
C125
0.1 F
C124
0.1 F
L113
2.2μH
L111
10μH
L112 10μH
L110 10μH
C118
0.1 F
R116 22k
(See page 156.)
TO
SS-134
BOARD(1/2)
CN003
(SERVO SYSTEM CONTROL)
S101
EJECT
SW
DRUM

FU-97 (POWER) SCHEMATIC DIAGRAM

—Ref. No. FU-97 BOARD : 7000 series—


1
2
3
4
5
6
7
8
9
FU-97 BOARD
TP101
TP102
Q103
DRUM VS BUFFER
Q102
REG
C109 10 10V 05
Q101
CAPSTAN VS BUFFER
C107 0.1 F
R112 6800
C111 0.1 F
L107 22μH
C108 10 10V 05
R101 33k
R102 68k
C103 33 10V SXG
C104 100 10V
L104 10
R113 3.3k
RV101 2.2k
R114 10k
R110 47k
C110 10 10V 05
L108 47
R111 47k
CL23
D103 PR2222BI
R119 470
D102 5B05W05
L106 47
CL24
Q101 (1/2) FC805
Q101 (2/2) FC805
Q103 2SB1121ST
Q102 2SB1302ST
Q101 2SB1121ST
CN102 20PIN
V1 5V
V1 GND
AU GND
9S GND
EVF GND
PCM GND
AU5V
EVF5V
9S5V
TALLY
UNREG GND
CAP ERROR
CAP VS
DRUM ERROR
DRUM VS
VTR POWER
M UNREG
MOTOR GND
EJECT
UNREG
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
CL2
CL27
CL3
CL5
CL20
CL4
CL21
CL15
CL22
CL6
CL7
CL17
CL8
CL14
CL9
CL13
CL10
CL12
CL11
CL19
L113 2.2μH
C121 0.1 F
C122 33 10V SXG
C126 0.1 F
C125 0.1 F
C124 0.1 F
L111 10μH
L112 10μH
L110 10μH
C114 0.047 B
C115 0.047 B
R109 220
R108 22k
R107 220
R106 15k
R105 22k
C113 0.047 B
R104 220
R115 22k
C116 2200p
C112 2200p B
R103 22k
IC101 MC141600FU
OUT2
CCR2
VCC1
OUT1
CCR1
DGND
CCR3
OUT3
F.B.2
INPUT2
INPUT2
C2MONIT
ENABLE2
F.B.1
INPUT1
INPUT1
F.B.3
INPUT3
INPUT3
C3MONIT
ENABLE3
VCC23
CM3
CM3
CMIN
STAND-BY-LOW
GND
V25
VCC
RT
CT
PEC
R117 47k
C117 470p
C118 0.1 F
R116 22k
C127 0.1 F
R118 68k
C119 120p UJ
RV102 47k
C120 0.047
(See page 156.)
TO SS-134 BOARD(1/2) CN003
SERVO SYSTEM CONTROL
S101
EJECT
A
B
IC101
SW REG CONT
DRUM/CAPSTAN
VS CONT

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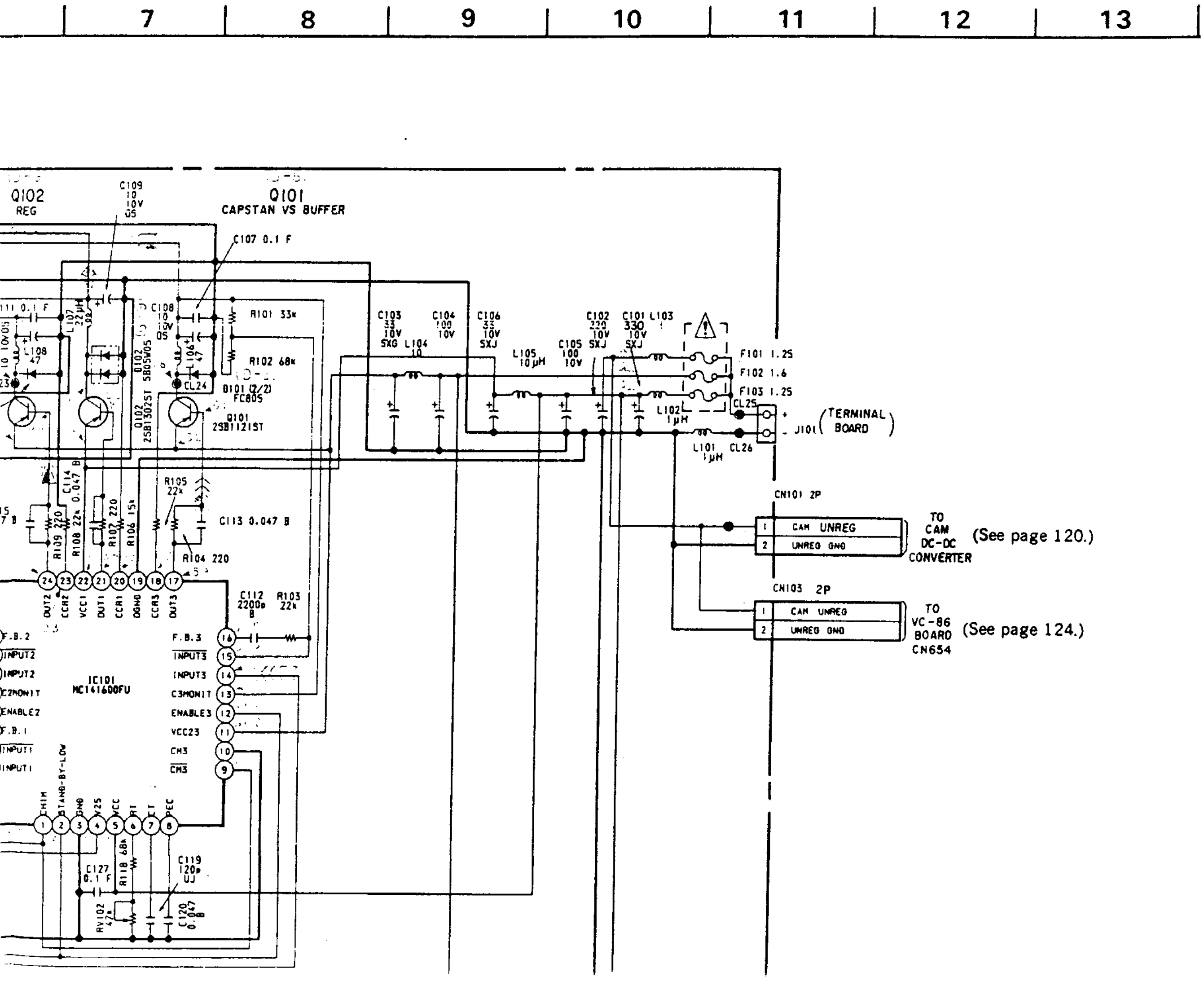
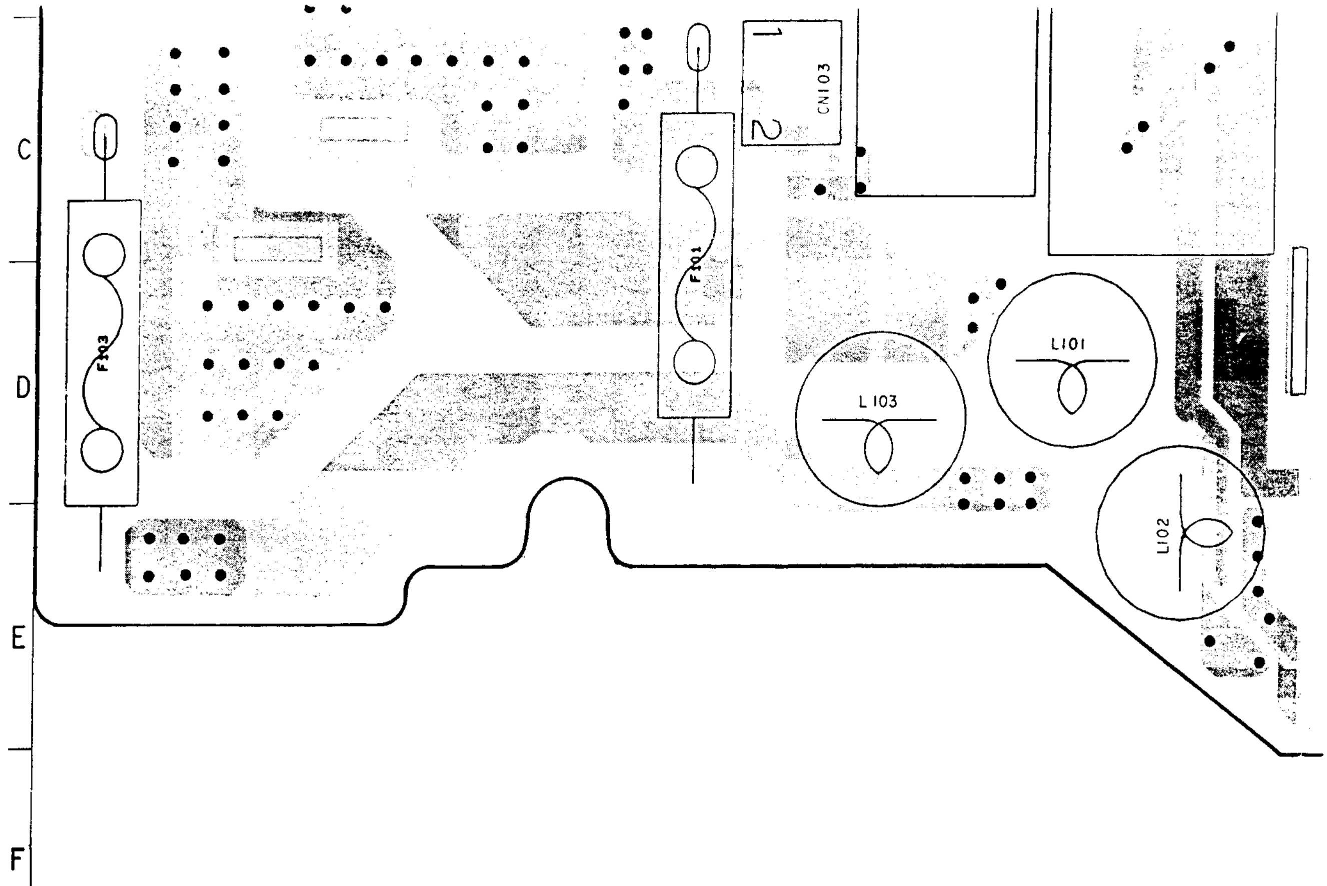
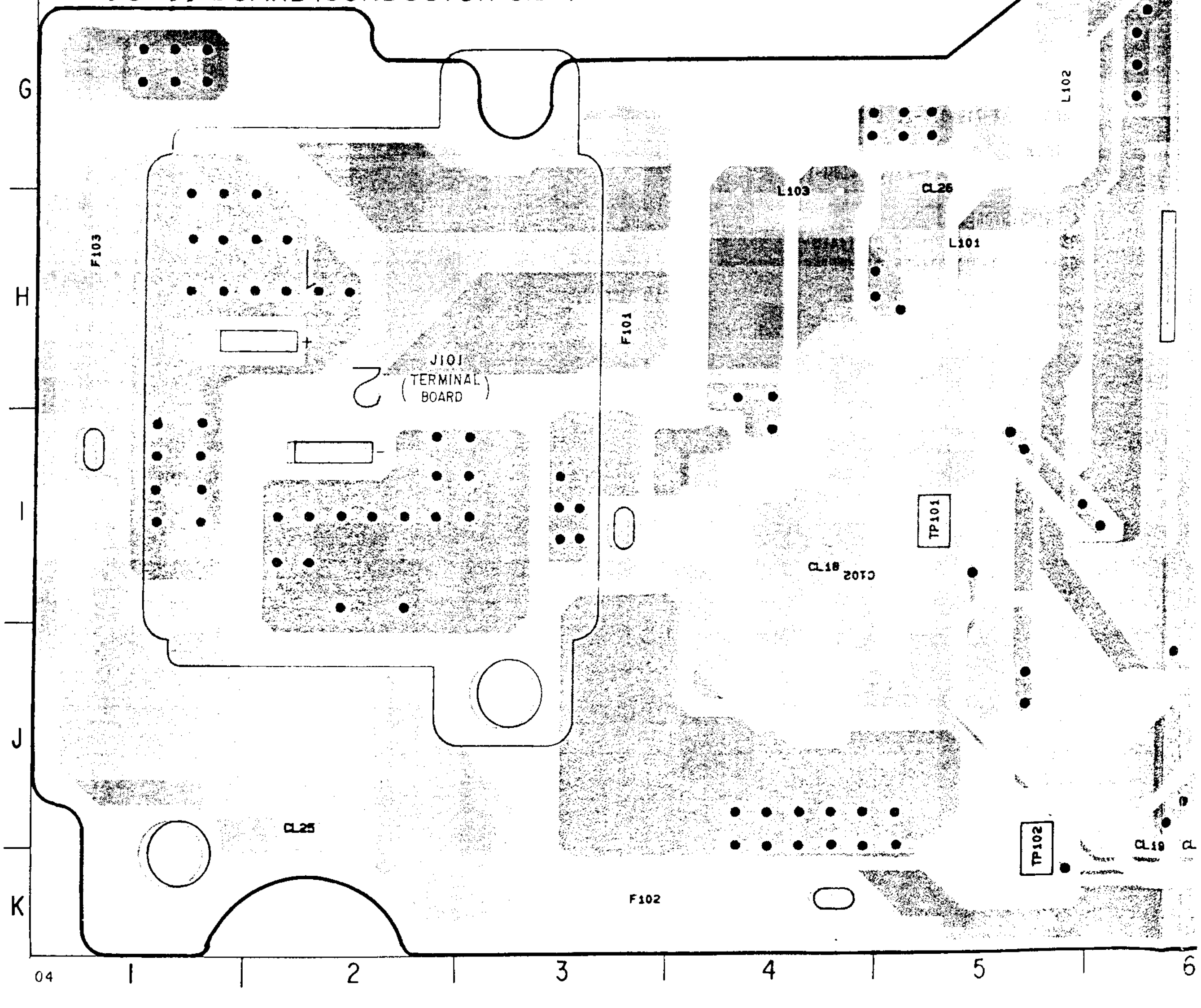
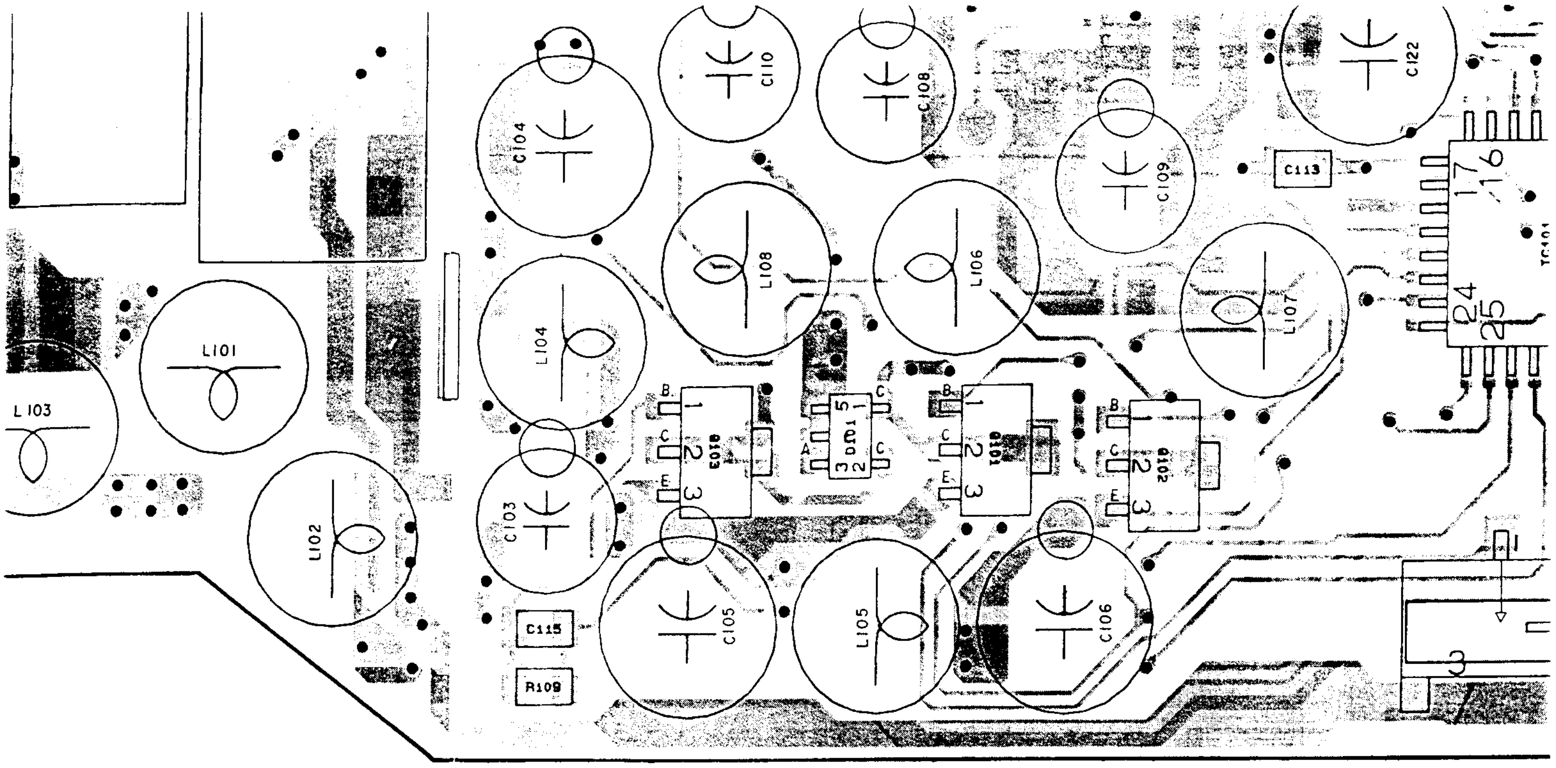

7
8
9
10
11
12
13
Q102
REG
Q101
CAPSTAN VS BUFFER
C109 10 10V G5
C107 0.1 F
C108 10 10V G5
R101 33k
R102 68k
L107 22μH
L108 47
L106 47
D102 5B05V05
Q102 2SB1302ST
D101 (2/2) FC805
CL24
Q101 2SB1121ST
C114 0.047 B
R109 220
R108 22k
R107 220
R106 15k
R105 22k
C113 0.047 B
R104 220
C112 2200p B
R103 22k
C103 33 10V SXG
L104 10
C104 100 10V
C106 33 10V SXJ
L105 10μH
C105 100 10V
C102 220 10V SXJ
C101 330 10V SXJ
L103
L102 1μH
L101 1μH
F101 1.25
F102 1.6
F103 1.25
CL25
CL26
J101 (TERMINAL BOARD)
CN101 2P
1 CAM UNREG
2 UNREG GND
TO CAM DC-DC CONVERTER
(See page 120.)
CN103 2P
1 CAM UNREG
2 UNREG GND
TO VC-86 BOARD CN654
(See page 124.)
IC101
MC141600FU
OUT2 CCR2 VCC1 OUT1 CCR1 DGND CCR3 OUT3
F.B.2
INPUT2
INPUT2
C2MONIT
ENABLE2
F.B.1
INPUT1
INPUT1
F.B.3
INPUT3
INPUT3
C3MONIT
ENABLE3
VCC23
CH3
CH3
CHIM
STAND-BY-LOW
GND
V25
VCC
RT
CT
PEC
C127 0.1 F
R118 68k
RV102 47k
C119 120p UJ
C120 0.047 B


C
D
E
F
F103
F101
1
2
CN103
L103
L101
L102

FU-97 BOARD (CONDUCTOR SIDE)


G
H
I
J
K
F103
F101
J101
(TERMINAL BOARD)
2
L103
CL26
L101
L102
TP101
CL18
CL25
F102
TP102
CL19
CL
04
1
2
3
4
5
6


C104
C110
C108
C122
C113
C109
IC101
17
16
24
25
L101
L103
L104
L108
L106
L107
Q103
D101
Q101
Q102
B
C
E
A
1
2
3
5
L102
C103
C105
L105
C106
C115
R109

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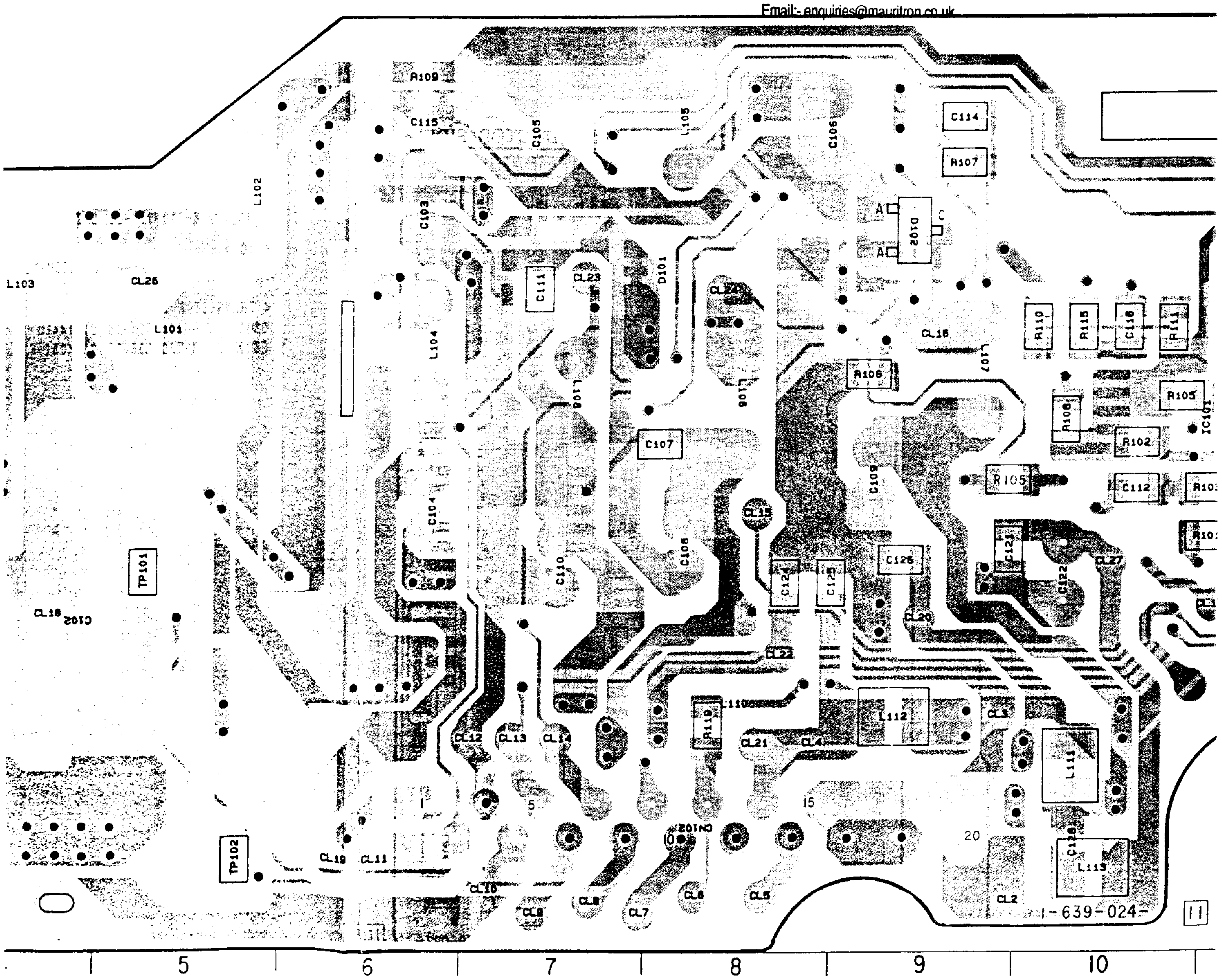
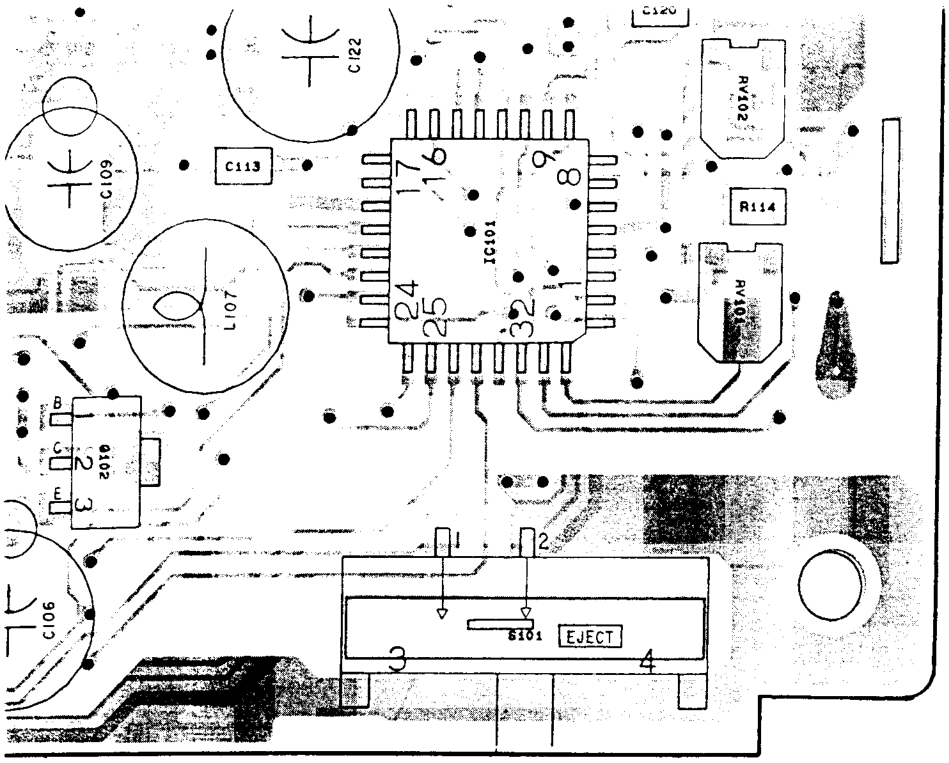
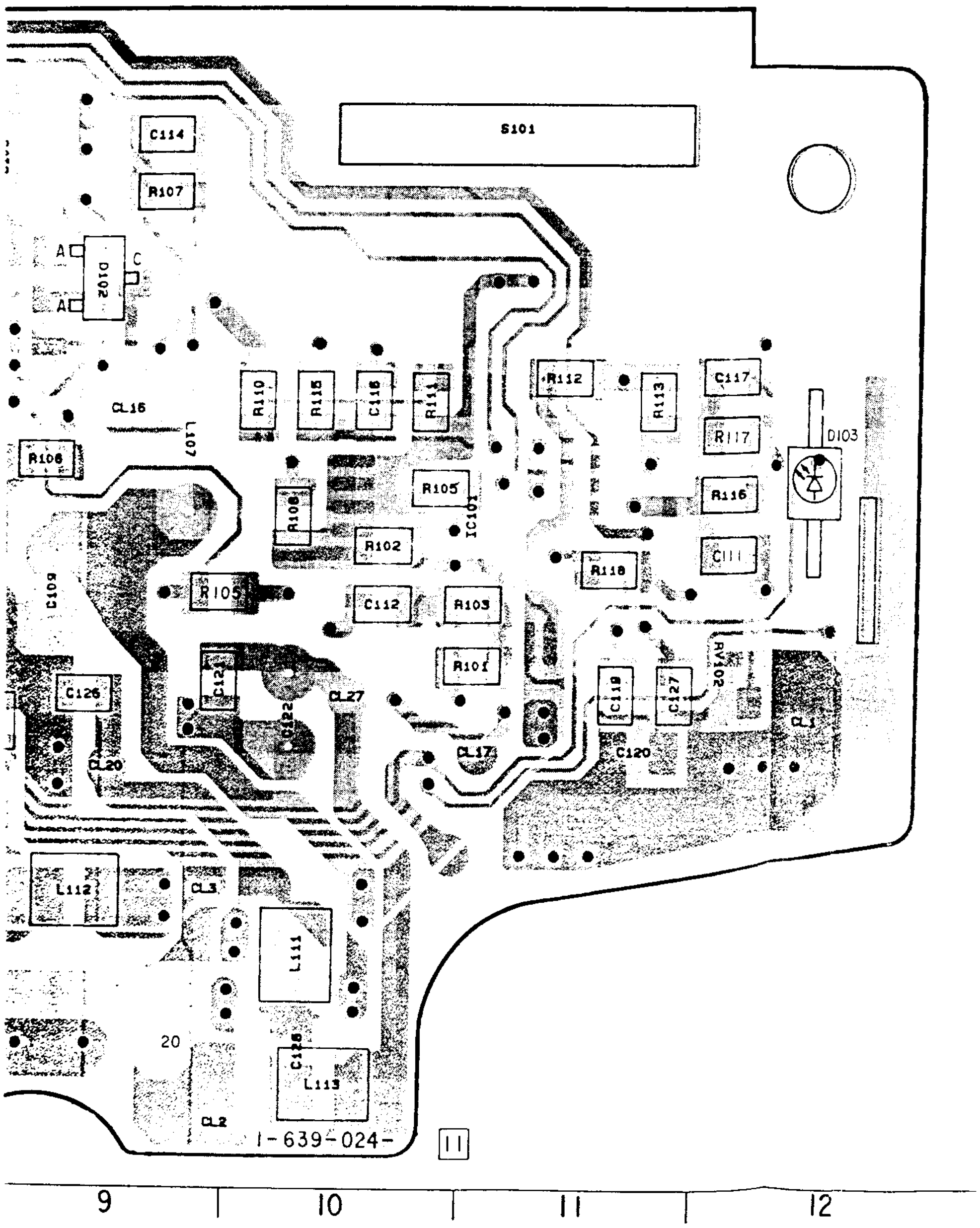

R109
C115
C105
L105
C106
C114
R107
D102
A
C
L102
C103
D101
C111
CL23
CL24
L103
CL26
L101
L104
L108
L106
CL16
L107
R110
R115
C116
R111
R106
R108
R105
IC101
R102
C107
C109
C112
CL15
C104
C110
C108
C124
C125
C126
C123
C122
CL27
TP101
CL18
C102
CL20
CL22
R119
L110
L112
CL3
L111
CL12
CL13
CL14
CL21
CL4
CN102
TP102
CL19
CL11
CL10
CL9
CL8
CL7
CL6
CL5
CL2
C118
L113
5
15
20
1-639-024-
11
5
6
7
8
9
10

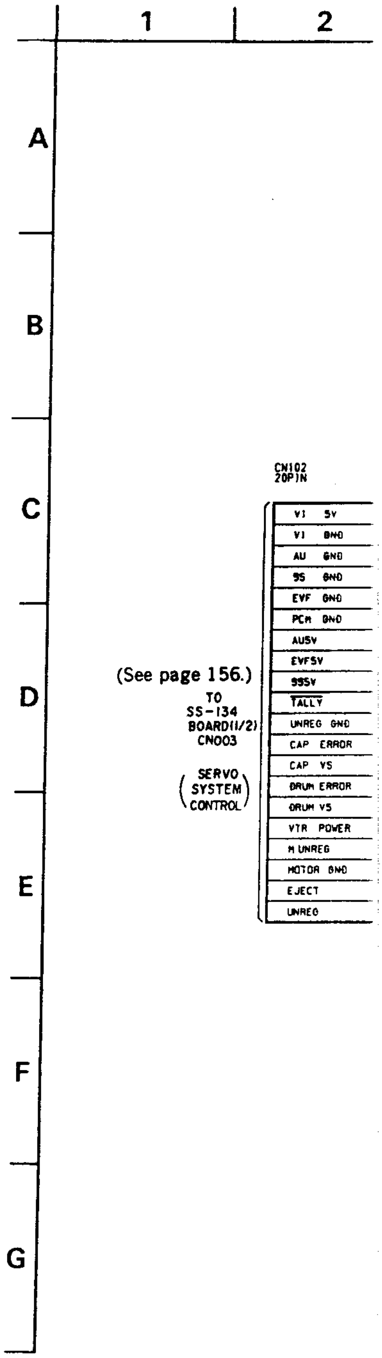
POWER POWER


C120
C122
RV102
C109
C113
17
16
9
8
R114
IC101
L107
24
25
32
1
RV101
B
C
E
Q102
1
2
3
1
2
C106
S101
EJECT
3
4


C114
S101
R107
A
C
A
D102
CL16
L107
R106
R110
R115
C116
R111
R112
R113
C117
R117
D103
R105
R108
IC101
R116
R102
C111
R118
R104
C112
R103
C109
R101
C126
C121
C122
CL27
C119
C127
RV102
CL1
CL17
C120
CL20
L112
CL3
L111
20
C128
L113
CL2
1-639-024-
11
9
10
11
12

FU-97 (POWER) SCHEMATIC D

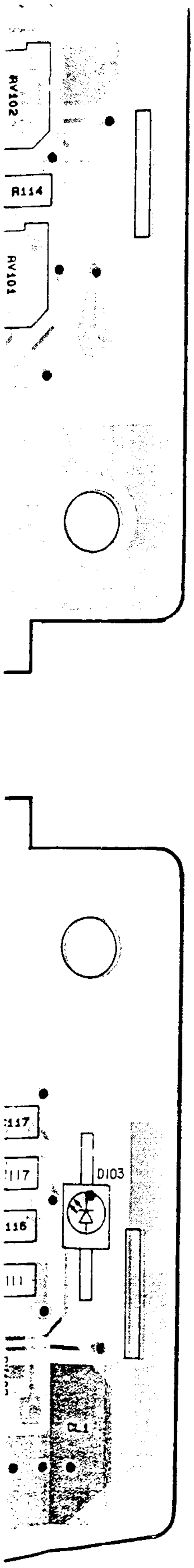
—Ref. No. FU-97 BOARD : 70(


1
2
A
B
C
D
E
F
G
CN102
20PIN
V1 5V
V1 GND
AU GND
SS GND
EVF GND
PCM GND
AU5V
EVF5V
SS5V
TALLY
UNREG GND
CAP ERROR
CAP VS
DRUM ERROR
DRUM VS
VTR POWER
M UNREG
MOTOR GND
EJECT
UNREG

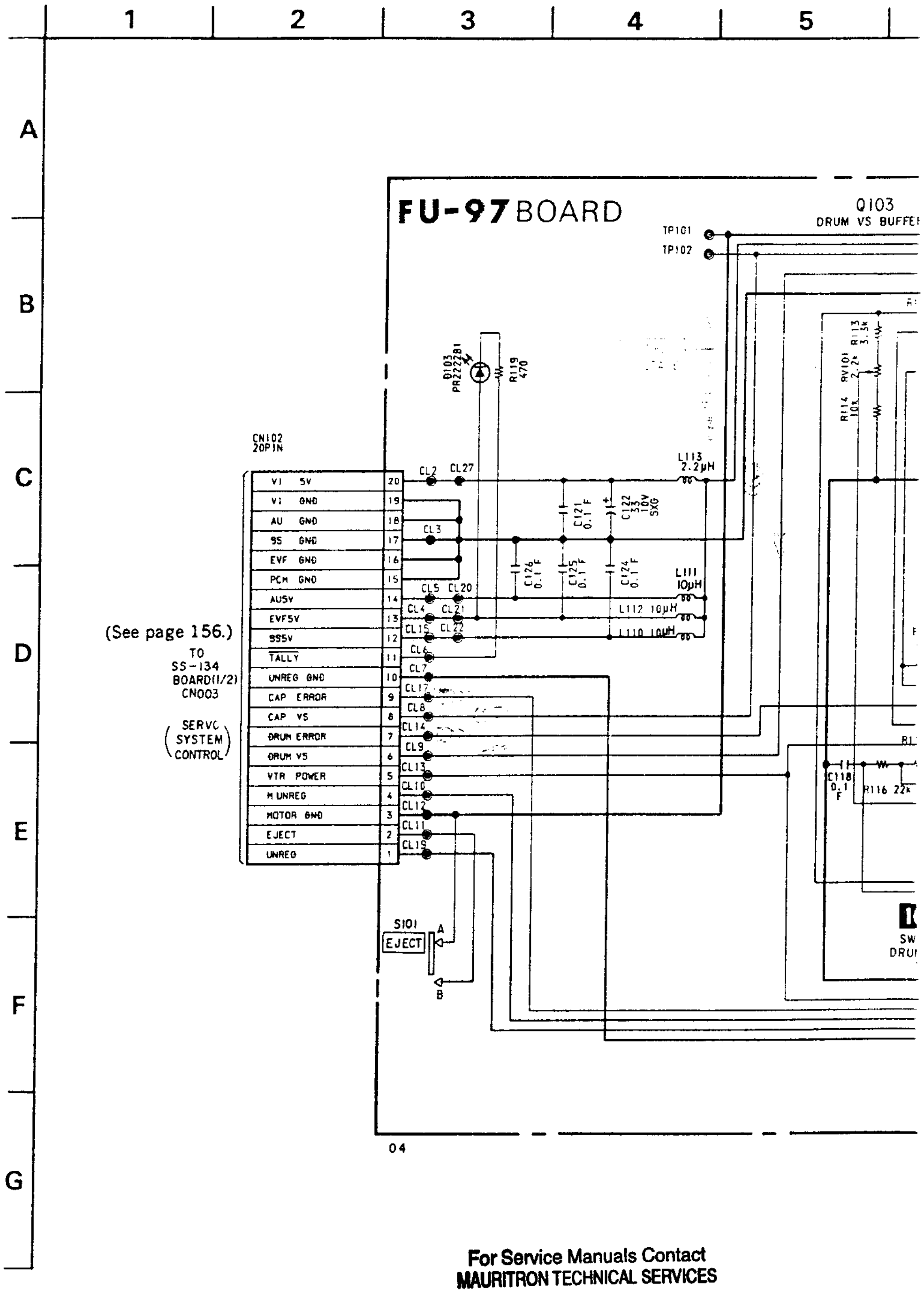
(See page 156.)

TO
SS-134
BOARD(1/2)
CN003

(SERVO
SYSTEM
CONTROL)


RV102
R114
RV101
117
117
D103
116
111
CL1

FU-97 (POWER) SCHEMATIC DIAGRAM
—Ref. No. FU-97 BOARD : 7000 series—


1
2
3
4
5
A
B
C
D
E
F
G
FU-97 BOARD
Q103
DRUM VS BUFFER
TP101
TP102
D103
PR2222B1
R119
470
R113
3.3k
RV101
2.2k
R114
10k
CN102
20PIN
VI 5V
VI GND
AU GND
9S GND
EVF GND
PCM GND
AU5V
EVF5V
9S5V
TALLY
UNREG GND
CAP ERROR
CAP VS
DRUM ERROR
DRUM VS
VTR POWER
M UNREG
MOTOR GND
EJECT
UNREG
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
CL2
CL27
CL3
CL5
CL20
CL4
CL21
CL15
CL22
CL6
CL7
CL17
CL8
CL14
CL9
CL13
CL10
CL12
CL11
CL19
C121
0.1 F
C122
33
10V
SXG
C126
0.1 F
C125
0.1 F
C124
0.1 F
L113
2.2μH
L111
10μH
L112 10μH
L110 10μH
C118
0.1
F
R116 22k
SW
DRUM
(See page 156.)
TO
SS-134
BOARD(1/2)
CN003
(SERVO SYSTEM CONTROL)
S101
EJECT
A
B
04

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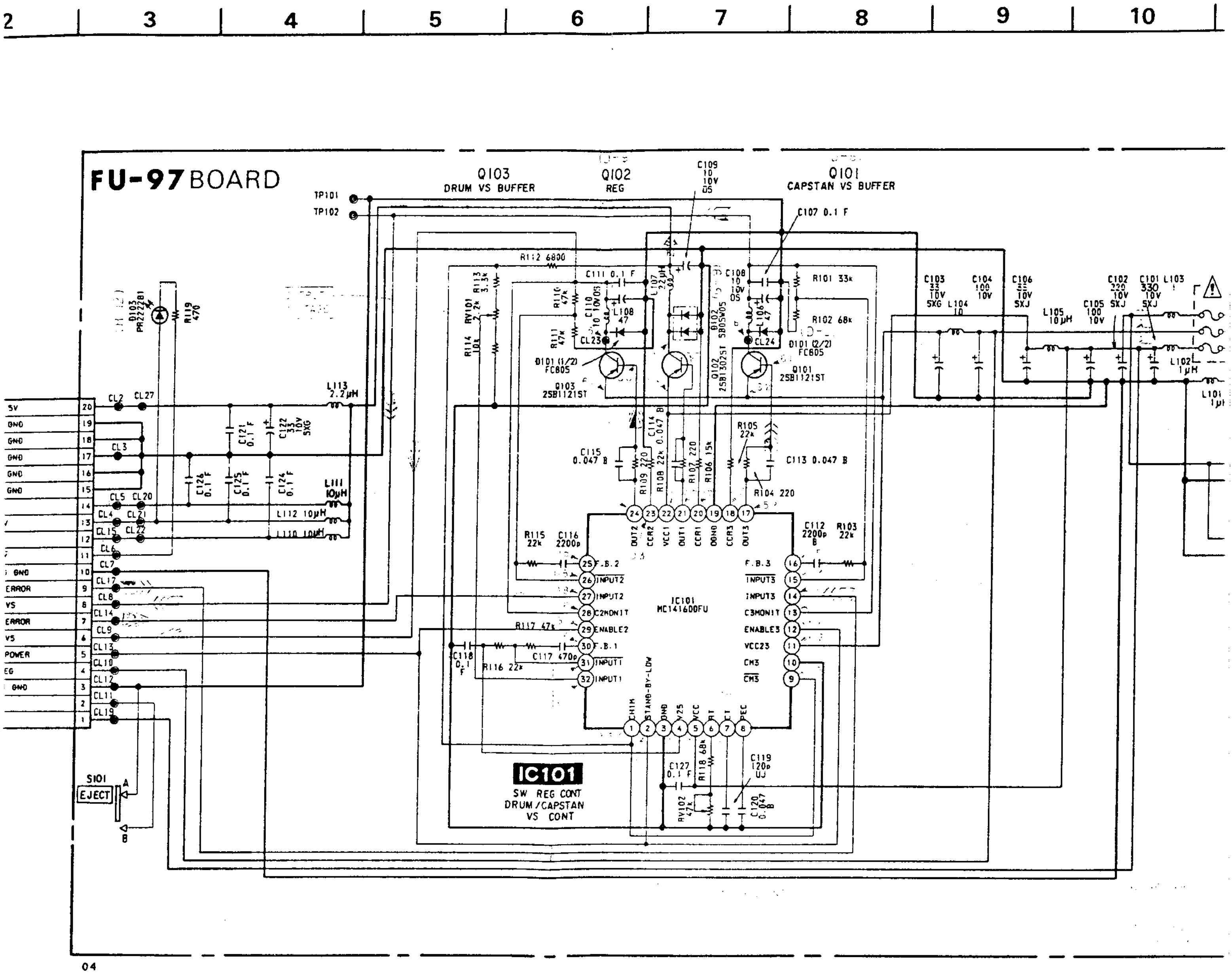
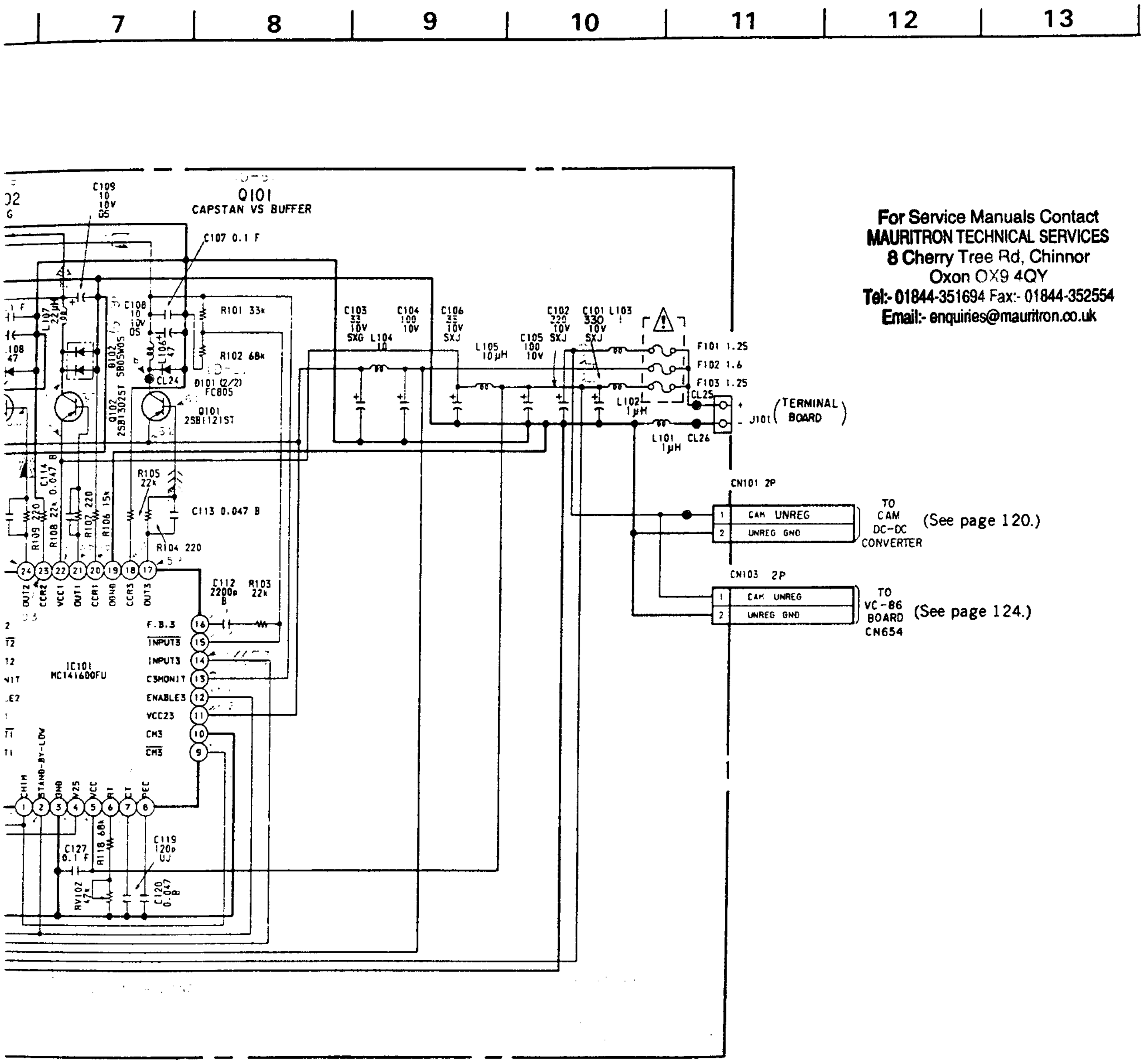

2
3
4
5
6
7
8
9
10
FU-97 BOARD
TP101
TP102
Q103
DRUM VS BUFFER
Q102
REG
Q101
CAPSTAN VS BUFFER
C109 10 10V US
C107 0.1 F
R112 6800
C111 0.1 F
R113 3.3k
RV101 2.2k
R114 10k
R110 47k
R111 47k
C110 10 10V 0S
L108 47
L107 22μH
C108 10 10V 0S
C106 47
R101 33k
R102 68k
D102 SB05W05
CL23
CL24
D101 (1/2) FC805
D101 (2/2) FC805
Q103 2SB1121ST
Q102 2SB1302ST
Q101 2SB1121ST
C103 33 10V 5XG
L104 10
C104 100 10V
C106 22 10V 5XJ
L105 10μH
C105 100 10V
C102 220 10V 5XJ
C101 330 10V 5XJ
L103
L102 1μH
L101 1μH
D103 PR2222B1
R119 470
L113 2.2μH
C121 0.1 F
C122 33 10V 5XG
C126 0.1 F
C125 0.1 F
C124 0.1 F
L111 10μH
L112 10μH
L110 10μH
C115 0.047 B
C114 0.047 B
R109 220
R108 22k
R107 220
R106 15k
R105 22k
R104 220
C113 0.047 B
R115 22k
C116 2200p
C112 2200p B
R103 22k
IC101 MC141600FU
R117 47k
C118 0.1 F
R116 22k
C117 470p
C127 0.1 F
R118 68k
RV102 47k
C119 120p UJ
C120 0.047 B
OUT2
CCR2
VCC1
OUT1
CCR1
DGND
CCR3
OUT3
F.B.2
INPUT2
INPUT2
C2MONIT
ENABLE2
F.B.1
INPUT1
INPUT1
F.B.3
INPUT3
INPUT3
C3MONIT
ENABLE3
VCC23
CH3
CH3
CHIN
STAND-BY-LOW
GND
V25
VCC
RT
CT
PEC
IC101
SW REG CONT
DRUM/CAPSTAN
VS CONT
S101
EJECT
A
B
5V
GND
GND
GND
GND
GND
GND
ERROR
VS
ERROR
VS
POWER
EG
GND
CL2
CL27
CL3
CL5
CL20
CL4
CL21
CL15
CL22
CL6
CL7
CL17
CL8
CL14
CL9
CL13
CL10
CL12
CL11
CL19
04

• Signal pa

Ref.signal

POWER POWER


7
8
9
10
11
12
13
Q101
CAPSTAN VS BUFFER
C109 10 10V 05
C107 0.1 F
C108 10 10V 05
L107 22μH
L106 47
R101 33k
R102 68k
D102 SB05W05
D101 (2/2) FC805
CL24
Q102 2SB1302ST
Q101 2SB1121ST
C103 33 10V SXG
L104 10
C104 100 10V
C106 33 10V SXJ
L105 10μH
C105 100 10V
C102 220 10V SXJ
C101 330 10V SXJ
L103
F101 1.25
F102 1.6
F103 1.25
CL25
L102 1μH
L101 1μH
CL26
J101
TERMINAL BOARD
CN101 2P
CAM UNREG
UNREG GND
TO CAM DC-DC CONVERTER
(See page 120.)
CN103 2P
CAM UNREG
UNREG GND
TO VC-86 BOARD CN654
(See page 124.)
C114 0.047 B
R105 22k
C113 0.047 B
R109 220
R108 22k
R107 220
R106 15k
R104 220
C112 2200p B
R103 22k
OUT2
CCR2
VCC1
OUT1
CCR1
DOWN
CCR3
OUT3
F.B.3
INPUT3
INPUT3
CSMONIT
ENABLE3
VCC23
CH3
CH3
IC101
MC141600FU
STAND-BY-LOW
GND
VCC
C127 0.1 F
R118 68k
RV102 47k
C119 120p UJ
C120 0.047 B

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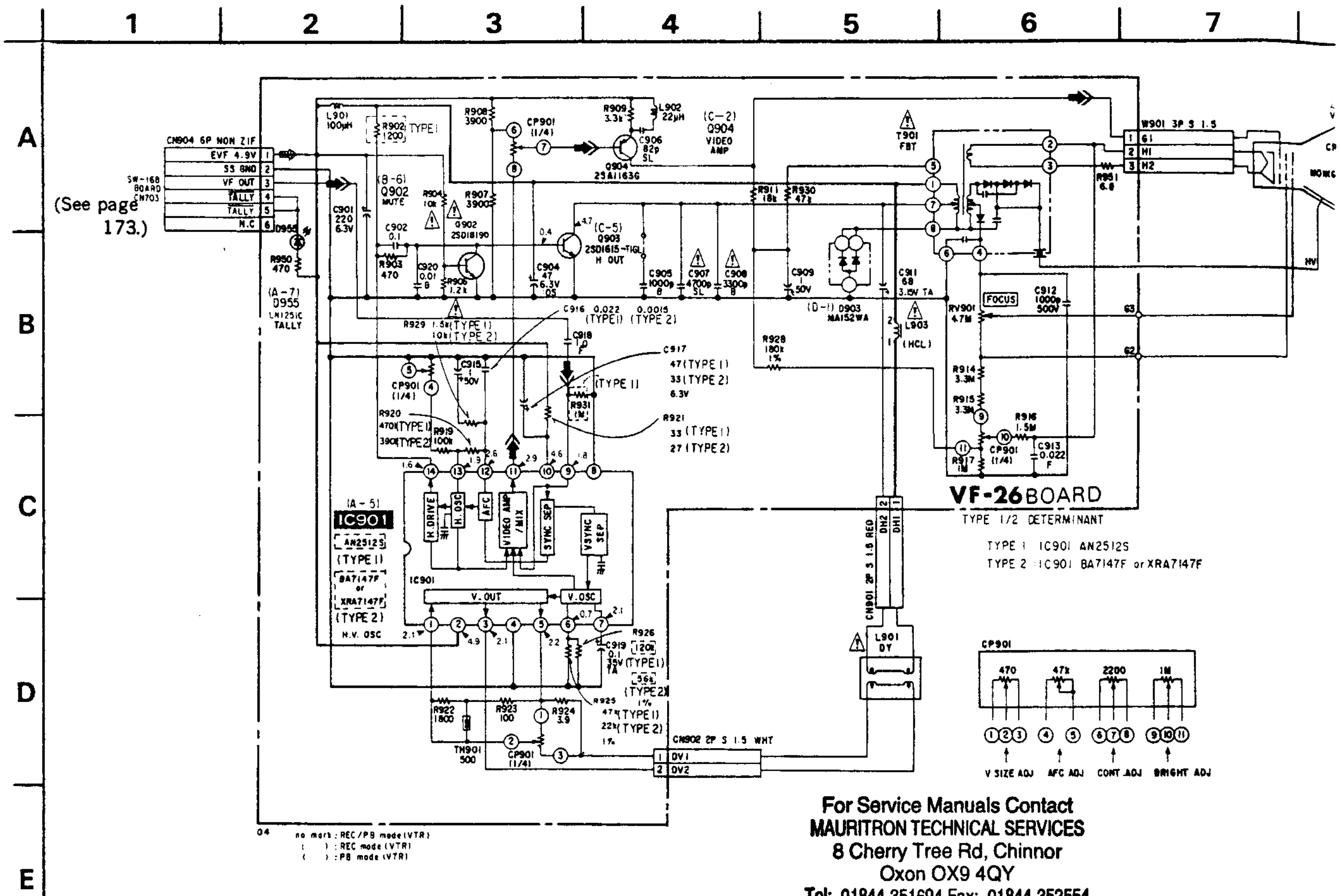
- Signal path

	REC	REC/PB	PB
Ref.signal	➤	➢	▷

WER

VF-26, VF-27 (VIEWFINDER) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

—Ref. No. VF-26 BOARD: 8000 series, VF-27 BOARD: 9000 series—


1
2
3
4
5
6
7
A
B
C
D
E
CN904 6P NON ZIF
EVF 4.9V
SS GND
VF OUT
TALLY
TALLY
N.C
SW-168 BOARD CN703
(See page 173.)
L901 100μH
R902 1200 (TYPE I)
R908 3900
CP901 (1/4)
R909 3.3k
L902 22μH
(C-2) Q904 VIDEO AMP
Q904 2SA1163G
C906 82p SL
T901 FBT
W901 3P S 1.5
G1
H1
H2
C901 220 6.3V
(B-6) Q902 MUTE
R904 10k
R907 3900
Q902 2SD1819O
C902 0.1
R903 470
C920 0.01 B
R905 1.2k
R950 470
(A-7) D955 LN1251C TALLY
(C-5) Q903 2SD1615-TIGL H OUT
C904 47 6.3V OS
C905 1000p
C907 4700p SL
C908 3300p B
R911 18k
R930 47k
C909 1 50V
C911 68 3.15V TA
(D-1) D903 MA152WA
L903 (HCL)
R928 180k 1%
FOCUS
C912 1000p 500V
RV901 4.7M
R951 6.8
R914 3.3M
R915 3.3M
R916 1.5M
R917 1M
CP901 (1/4)
C913 0.022 F
VF-26 BOARD
TYPE 1/2 DETERMINANT
TYPE 1 IC901 AN2512S
TYPE 2 IC901 BA7147F or XRA7147F
C916 0.022 (TYPE 1) 0.0015 (TYPE 2)
C918
R929 1.5k (TYPE 1) 10k (TYPE 2)
C915 1 50V
C917 47 (TYPE 1) 33 (TYPE 2) 6.3V
R931 1M
R921 33 (TYPE 1) 27 (TYPE 2)
R920 470 (TYPE 1) 390 (TYPE 2)
R919 100k
(A-5) IC901
AN2512S (TYPE 1)
BA7147F or XRA7147F (TYPE 2)
H.V. OSC
IC901
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V.OUT
V.OSC
R926 120 (TYPE 1) 56k (TYPE 2)
C919 0.1 35V TA
R925 47k (TYPE 1) 22k (TYPE 2) 1%
R922 1800
TH901 500
R923 100
R924 3.9
CP901 (1/4)
CN902 2P S 1.5 WHT
DV1
DV2
CN901 2P S 1.5 RED
DH2
DH1
L901 DY
CP901
470
47k
2200
1M
V SIZE ADJ
AFC ADJ
CONT ADJ
BRIGHT ADJ
04

no mark : REC/PB mode (VTR)
( ) : REC mode (VTR)
< > : PB mode (VTR)

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	➡➡➡
PB	⇨	⇨⇨	⇨⇨⇨

< DIODE >

D903	8-719-400-20	MA152WA
D955	8-719-404-19	LN1251C

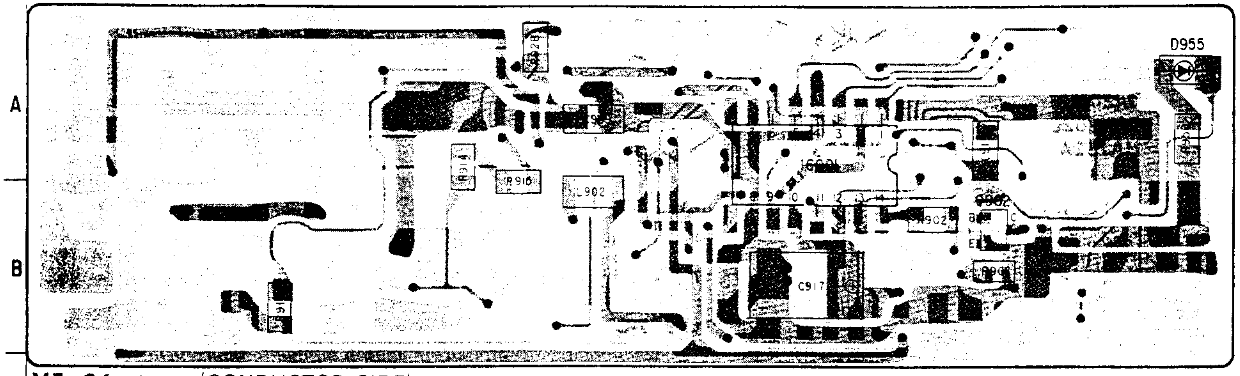
< IC >

IC901	8-759-420-01	AN2512S (TYPE 1)
IC901	8-759-511-01	BA7147F (TYPE 2)
IC901	8-759-514-92	XRA7147F (TYPE 2)

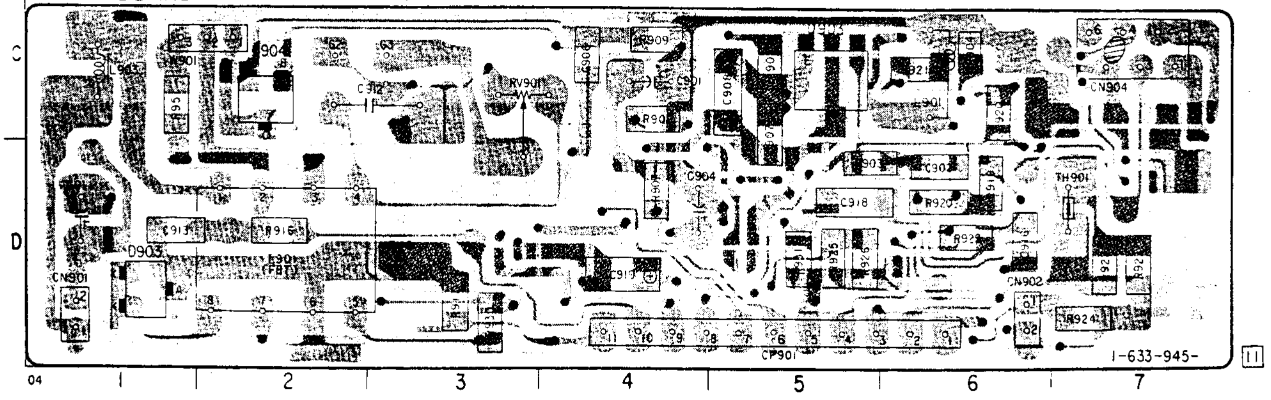
< TRANSISTOR >

Q902	· 8-729-402-31	2SD1819A-Q
Q903	8-729-420-81	2SD874A-R
Q904	8-729-216-31	2SA1163-G

VF-26 BOARD (COMPONENT SIDE)

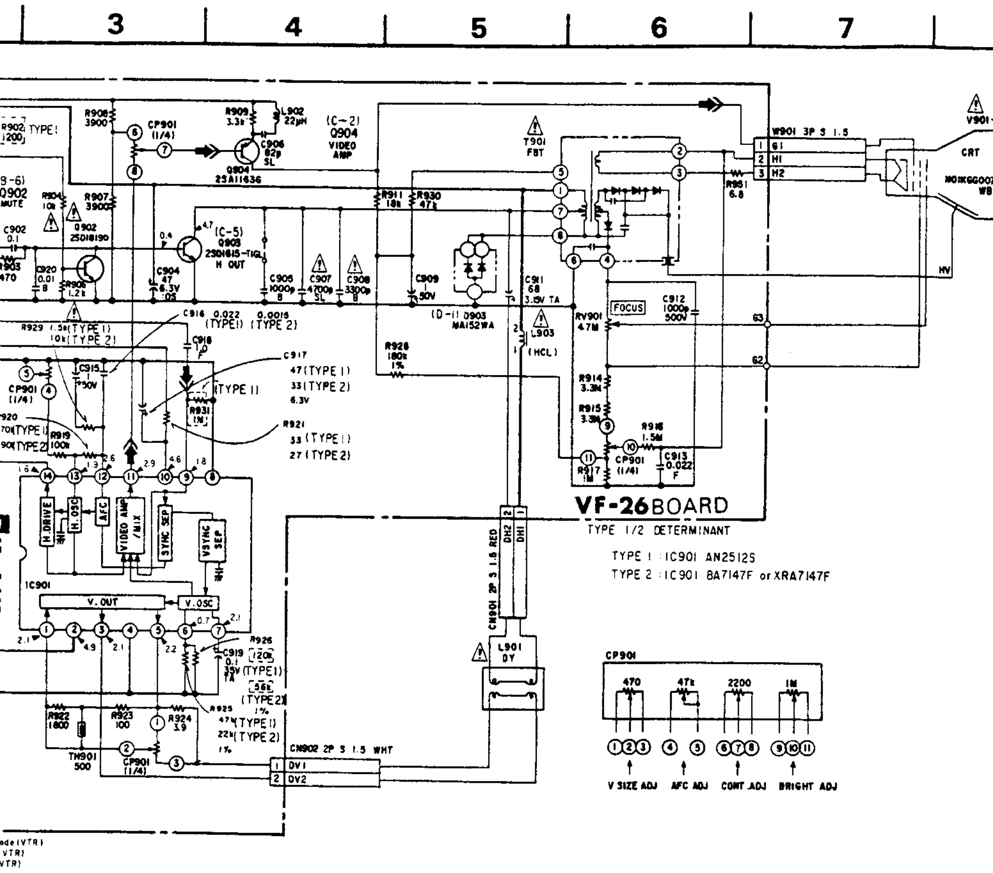

A
B
D955
R928
R914
R916
L902
C917
Q902
R902
C919

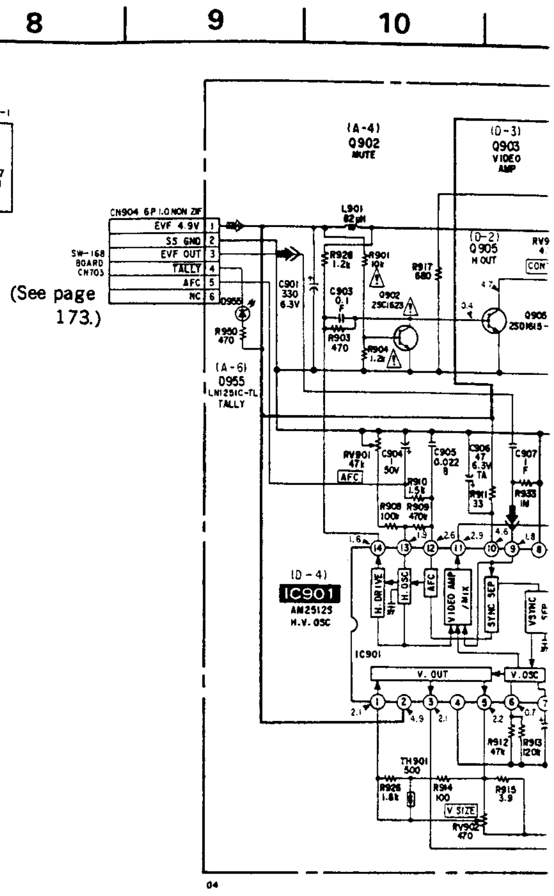
VF-26 BOARD (CONDUCTOR SIDE)


C
D
CN901
D903
C913
R916
(FBT)
RV901
C912
C919
C904
C918
R920
R923
CN902
TH901
R924
CN904
CP901
1-633-945-
11
04
1
2
3
4
5
6
7

RINTED WIRING BOARD AND SCHEMATIC DIAGRAM

series, VF-27 BOARD : 9000 series—


3
4
5
6
7
8
(C-2) Q904 VIDEO AMP
Q904 2SA1163G
(C-5) Q903 2SD1615-TIGL H OUT
Q902 2SD1819Q
T901 FBT
W901 3P S 1.5
G1
H1
H2
V901-1 CRT
M01KGG007 WB
(D-1) D903 MA152WA
L903 (HCL)
FOCUS
RV901 4.7M
HV
IC901
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V.OUT
V.OSC
TH901 500
CN902 2P S 1.5 WHT
DV1
DV2
CN901 2P S 1.8 RED
DH1
DH2
L901 DY
VF-26BOARD
TYPE 1/2 DETERMINANT
TYPE 1 : IC901 AN2512S
TYPE 2 : IC901 BA7147F or XRA7147F
CP901
470
47k
2200
1M
V SIZE ADJ
AFC ADJ
CONT ADJ
BRIGHT ADJ


9
10
(A-4) Q902 MUTE
(D-3) Q903 VIDEO AMP
(D-2) Q905 H OUT
CN904 6P 1.0MON ZIF
EVF 4.9V
SS GND
EVF OUT
TALLY
AFC
NC
SW-168 BOARD CN703
(See page 173.)
(A-6) D955 LN1251C-TL TALLY
(D-4) IC901 AN2512S H.V. OSC
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
V.OUT
V.OSC
TH901 500
V SIZE
RV902 470
04

CHROMA
⇛
⇨

< DIODE >

D903	8-719-400-20	MA152WA
D955	8-719-404-19	LN1251C

< IC >

IC901	8-759-420-01	AN2512S (TYPE 1)
IC901	8-759-511-01	BA7147F (TYPE 2)
IC901	8-759-514-92	XRA7147F (TYPE 2)

< TRANSISTOR >

Q902	• 8-729-402-31	2SD1819A-Q
Q903	8-729-420-81	2SD874A-R
Q904	8-729-216-31	2SA1163-G

< DIODE >

D903	8-719-400-20	MA152WA
D955	8-719-404-19	LN1251C

< IC >

IC901	8-759-420-01	AN2512S

<

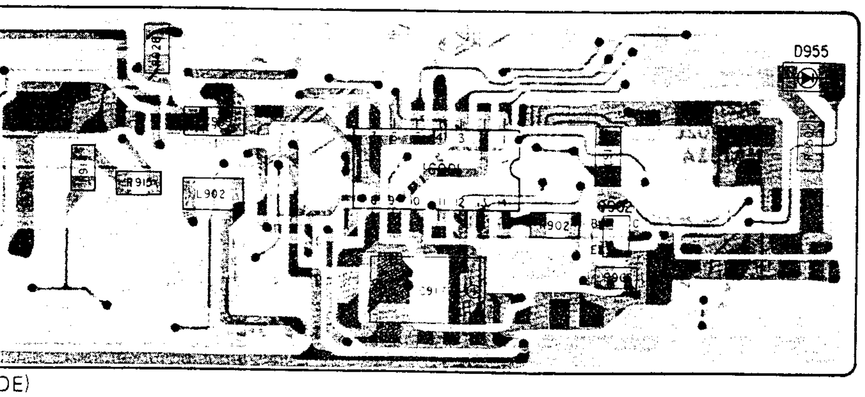
Q9

Q9

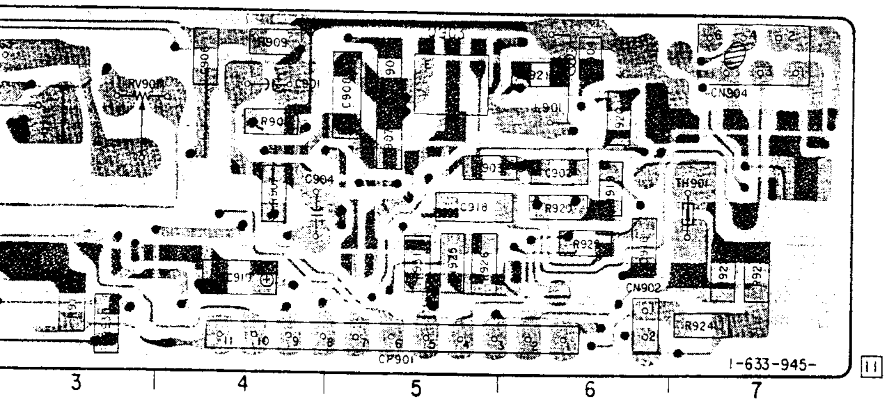
Q9

Q9

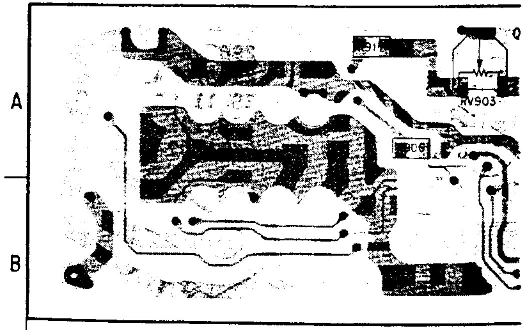
IDE)


D955
R915
L902
Q902
R902

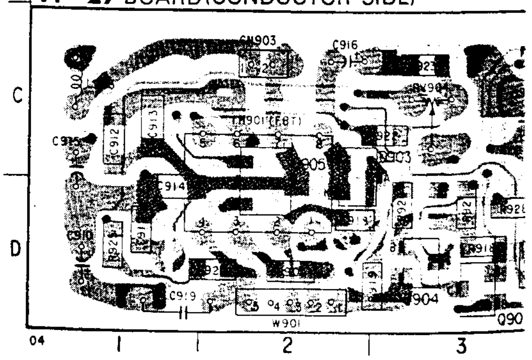
DE)

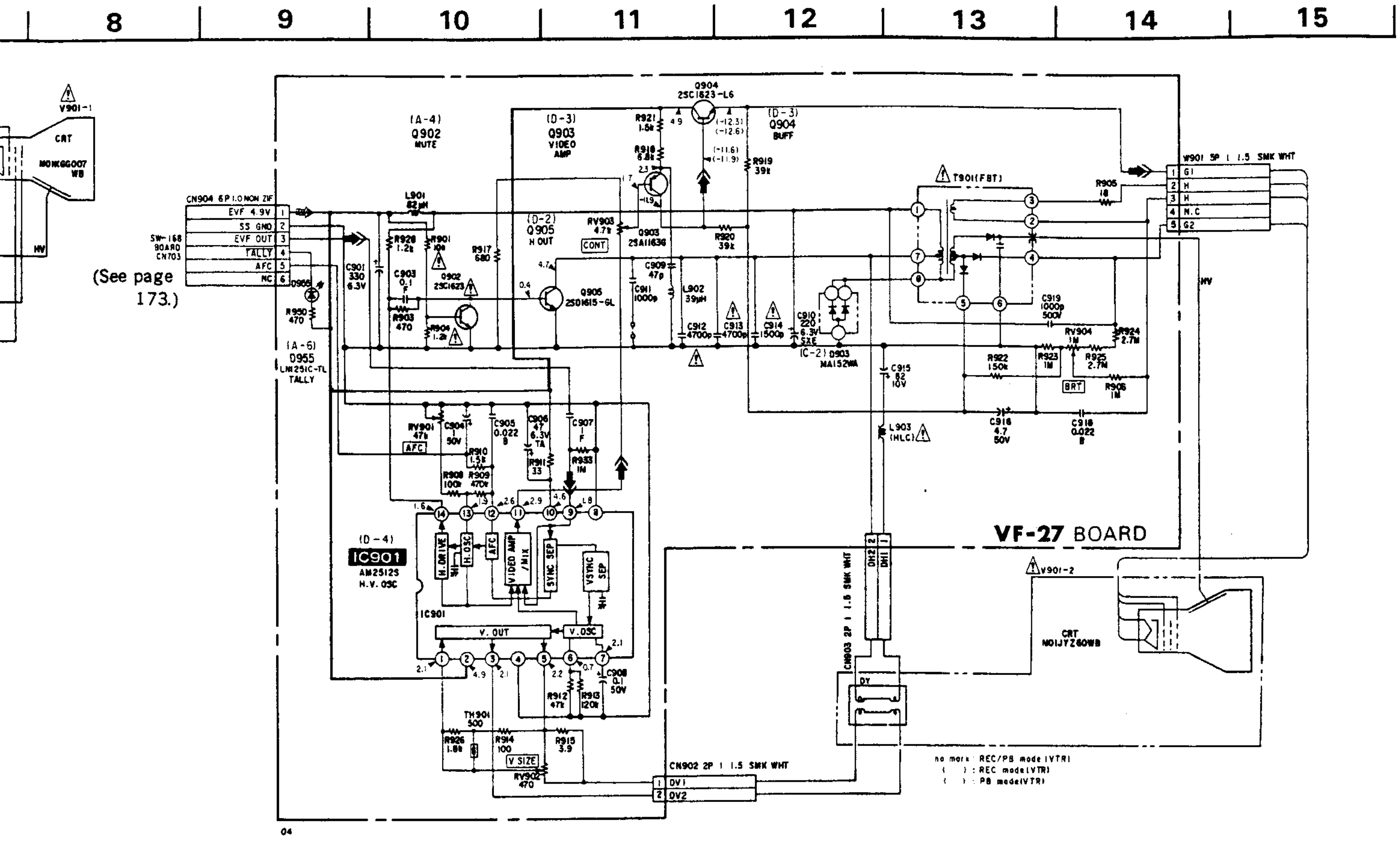

R909
RV901
C901
C904
CN904
TH901
C918
C917
CN902
R924
CP901
1-633-945-
11
3
4
5
6
7

VF-27 BOARD (COMPONENT SIDE)



VF-27 BOARD(CONDUCTOR SIDE)


C
D
CN903
C916
C912
TH901(FBT)
C914
C919
W901
Q904
04
1
2
3


8
9
10
11
12
13
14
15
V901-1
CRT
M01K66007 WB
HV
CN904 6P 1.0 NON ZIF
EVF 4.9V
SS GND
EVF OUT
TALLY
AFC
NC
SW-168 BOARD CN703
(See page 173.)
(A-4) Q902 MUTE
(D-3) Q903 VIDEO AMP
Q904 2SC1623-L6
(D-3) Q904 BUFF
(D-2) Q905 H OUT
Q905 2SD1615-GL
Q903 2SA1163G
Q902 2SC1623
L901 82µH
L902 39µH
L903 (HLC)
RV903 4.7k CONT
RV901 47k AFC
RV902 470 V SIZE
RV904 1M BRT
T901 (FBT)
(C-2) D903 MA152WA
(A-6) D955 LN1251C-TL TALLY
W901 5P 1 1.5 SMK WHT
G1
H
H
N.C
G2
(D-4) IC901 AN2512S H.V. OSC
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V. OUT
V. OSC
TH901 500
CN902 2P 1 1.5 SMK WHT
DV1
DV2
CN903 2P 1 1.5 SMK WHT
DH1
DH2
DY
V901-2
CRT N01JYZ60WB
VF-27 BOARD
no mark : REC/PB mode (VTR)
( ) : REC mode (VTR)
( ) : PB mode (VTR)
04

< DIODE >

D903	8-719-400-20	MA152WA
D955	8-719-404-19	LN1251C

< IC >

IC901	8-759-420-01	AN2512S

< TRANSISTOR >

Q902	8-729-100-66	2SC1623
Q903	8-729-216-31	2SA1163-G
Q904	8-729-100-66	2SC1623
Q905	8-729-106-68	2SD1615A-GP

19A-Q
4A-R
63-G

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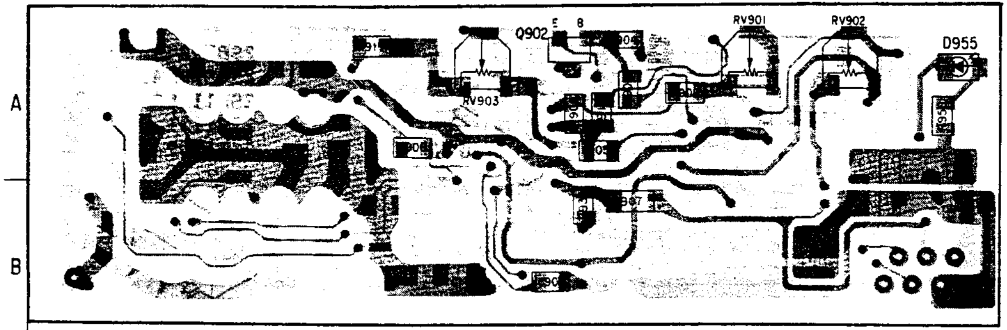
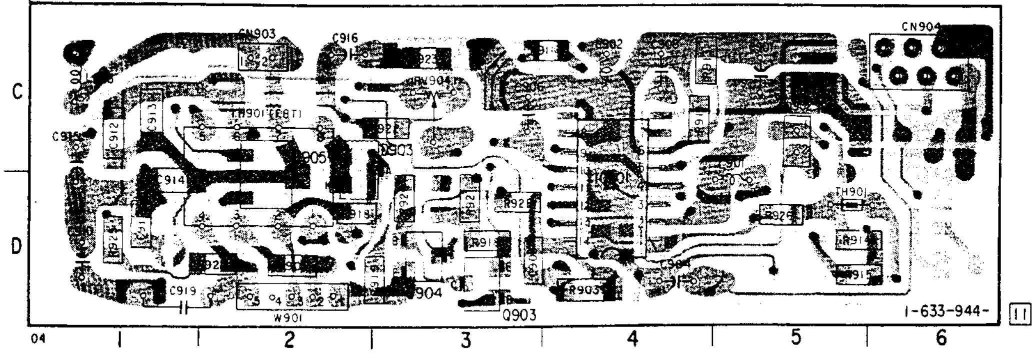
Email:- enquiries@mauritron.co.uk

VF-27 BOARD (COMPONENT SIDE)

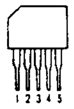

A
B
Q902
RV903
RV901
RV902
D955

VF-27 BOARD(CONDUCTOR SIDE)

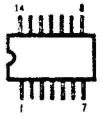

C
D
CN903
C916
CN904
T901 (FBT)
C912
C913
C914
C919
W901
Q903
RV903
TH901
1-633-944-11
04
1
2
3
4
5
6

4-3. SEMICONDUCTORS

BA401

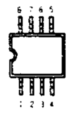


BA7147F
CX20095A
CXA1443N
LM324D
MC14066BF
TL1596CDB
XRA7147F
XRU4066BF



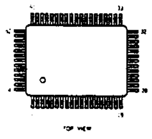
(TOP VIEW)

BR93C46
CXL5502N
HA118070FP
LM358D
LM393D
MM1036XF
NJM2233AM
NJM2234M
NJM2235M
RC3414M

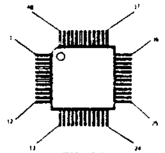


(TOP VIEW)

CF79028PG

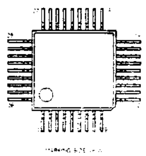


CXA-1488R
CXA1208R
CXA1392R
MB673198U



(TOP VIEW)

CXA-1536Q



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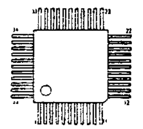
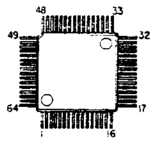
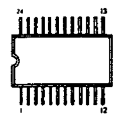
M51285BGP



CXA1207R
MC68HC11E9FU

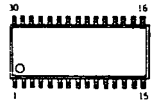

48
33
49
32
64
17
1
16

CXA1393AN
LA7470M-TEL



(TOP VIEW)

CXA8006M



(TOP VIEW)

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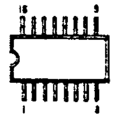
MC14028BF
MC14053BF
TC4028BF
MC10H116M



(TOP VIEW)

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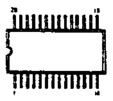

(TOP VIEW)

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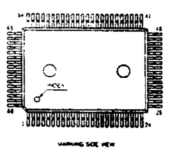

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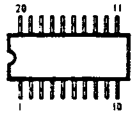
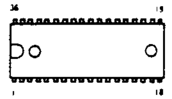
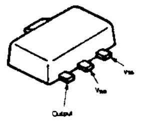


(TOP VIEW)

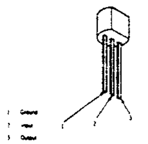
MCD002AM



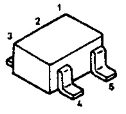
S-8054ALB-LM-S



S-81250HG-RD-S



TC7S08F



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

2SA1162-G
2SA1163-G
2SA1576-R
2SA1576-S
2SA1611-M5M6
2SB624-BV345
2SC1623
2SC2223-F13
2SC3326N
2SC4081-R
2SC4081-S
2SC4177-L5
2SC4178
2SK1332-3
DTA143EU
DTA144EU
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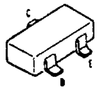
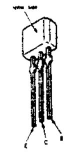
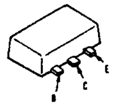
DTC144EU
DTC144TU
DTC144WU



2SA1175-HFE



2SB798-DL
2SB874A-R
2SB1115A
2SB1121
2SB1302-S



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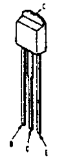

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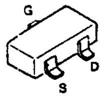
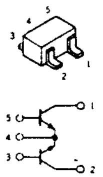
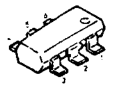


FMA2
FMG2
FMG4
FMG5
FMW1


1
2
3
4
5
1
2
3
4
5

1 Tr1 :Collector 1
2 Tr2 :Collector 2
3 Tr2 :Base 2
4 Tr1, 2 :Emitter
5 Tr1 :Base 1

FC101
IMH6
IMH8
XN6215
XN6401
XN6501



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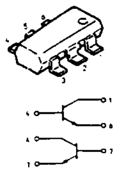
4 : 1E, 5 : 2E, 6 : 2B

IMX1



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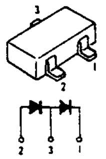
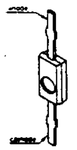
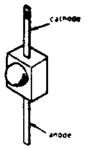
MA143



1T32


Anode
Cathode

AR2222S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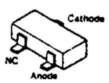
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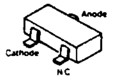
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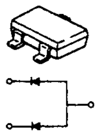

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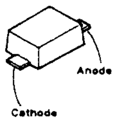
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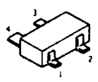

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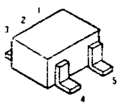

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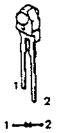

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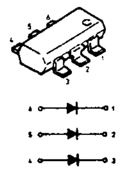

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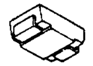

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MA152WA
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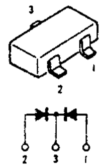

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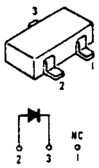

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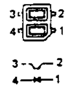

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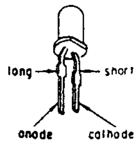
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SECTION 5
EXPLODED VIEWS

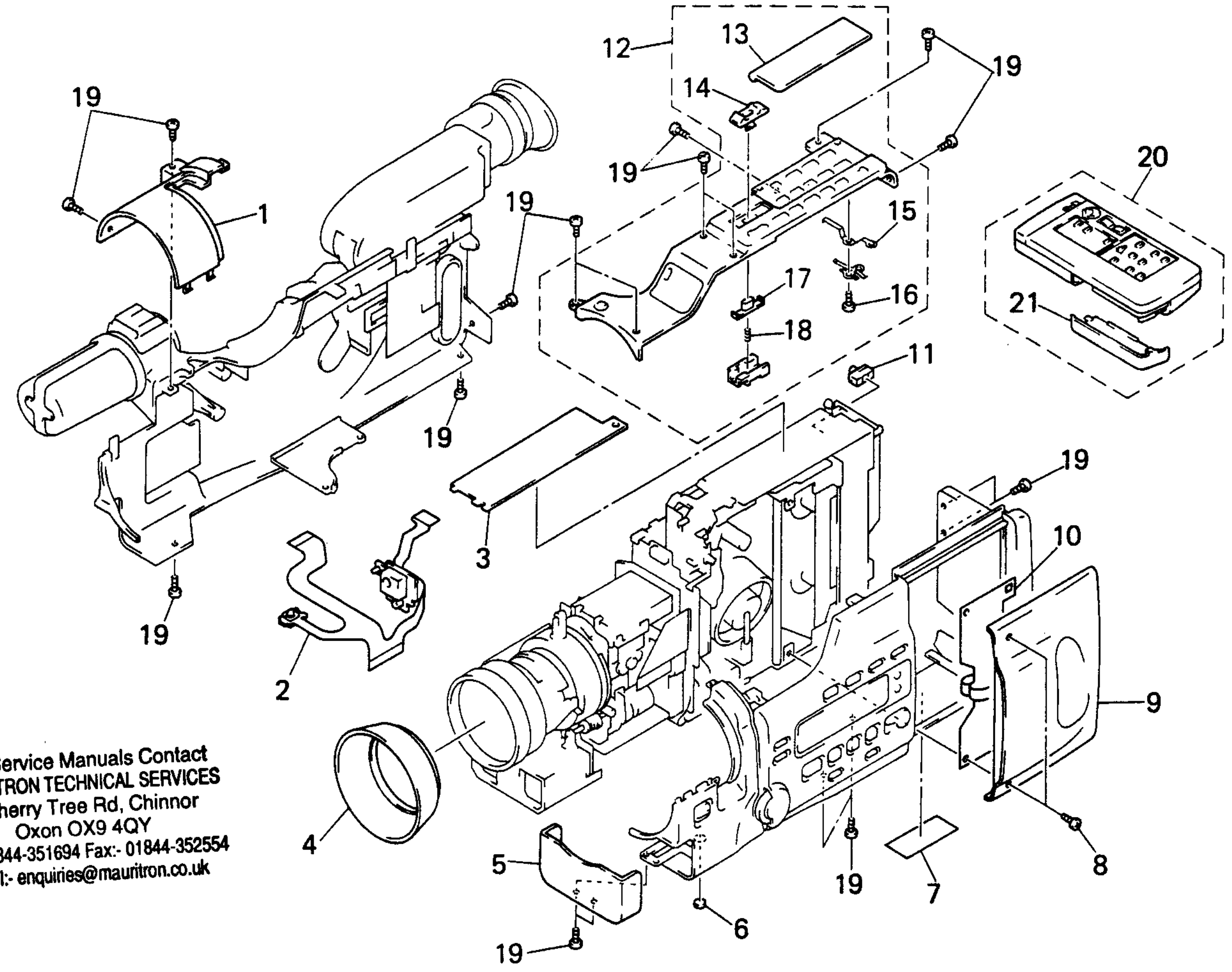
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

5-1. CABINET (UPPER) ASSEMBLY



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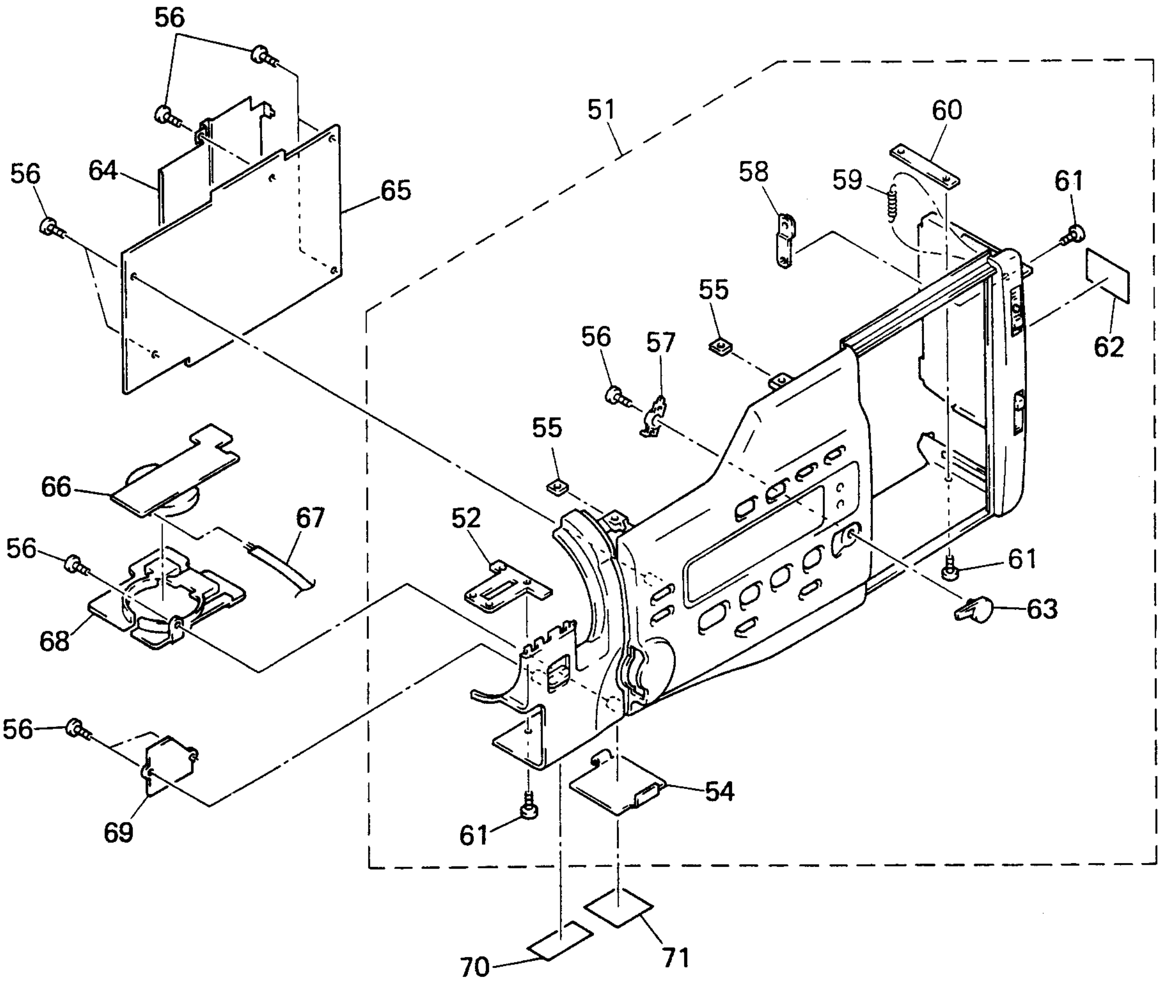
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

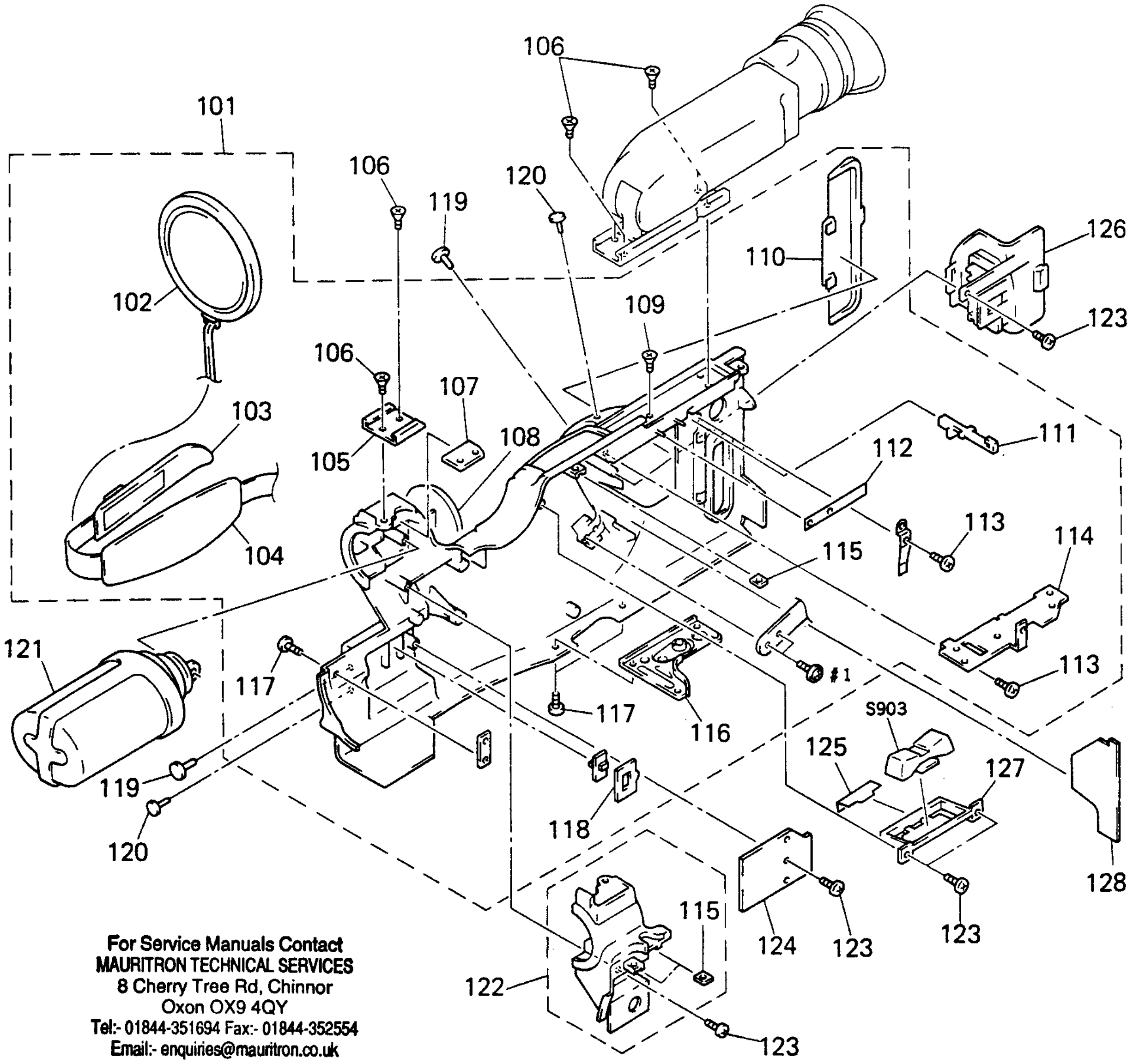
Ref. No.	Part No.	Description	Remark
1	3-942-213-01	CABINET, LENS	
2	1-639-030-11	FP-376 FLEXIBLE BOARD	
3	* A-7071-398-A	FK-47 BOARD, COMPLETE	
4	3-739-844-01	HOOD, LENS	
5	3-942-208-01	FILTER, CUT	
6	3-942-193-01	CAP, AF	
7	* 3-942-197-01	LABEL, MODEL NUMBER (U/C) (US/CND)	
	* 3-943-584-01	LABEL, MODEL NUMBER (E) (E)	
8	3-733-912-11	SCREW (M2X4.5), SPECIAL HEAD	
9	X-3940-492-1	LID ASSY, CASSETTE (US/CND)	
9	X-3940-817-1	LID ASSY, CASSETTE (E)	
10	3-746-253-02	RIBBON, LID RETAINER	
11	3-744-743-01	KNOB, IO SELECTION	
12	X-3940-493-1	CABINET (UPPER) ASSY	
13	3-744-750-01	LID, UPPER	
14	3-744-723-01	BUTTON (IO), POWER	
15	3-744-732-01	SPRING, CLICK	
16	3-713-790-11	SCREW (M2X5), TAPPING, P3	
17	* 3-718-257-11	BUTTON, PUSH, POWER	
18	3-303-973-00	SPRING, COMPRESSION	
19	3-719-381-01	SCREW (M2X4)	
20	1-465-395-41	COMMANDER, REMOTE (RMT-502)	
21	3-742-854-01	COVER, BATTERY	

5-2. CABINET (RIGHT) ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	X-3940-495-1	CABINET (R) SUB ASSY	
52	3-942-194-01	NUT, PLATE, C	
54	3-728-160-01	LID, BATTERY CASE	
55	3-718-233-01	NUT, PLATE	
56	3-713-790-11	SCREW (M2X5), TAPPING, P3	
57	3-942-189-01	LEVER, AUTOLOCK	
58	3-744-741-01	SHEET METAL, R	
59	3-674-402-00	SPRING, TENSION	
60	3-942-195-01	NUT, PLATE, V	
61	3-744-720-11	SCREW (M2X3)	
62	* 3-719-683-01	LABEL, BATTERY FITTING	
63	3-942-192-01	KNOB, AUTOLOCK	
64	* 3-942-201-01	CASE (08), FD SHIELD	
65	* A-7062-707-A	FD-44 BOARD, COMPLETE	
66	* A-7071-394-A	LI-33 BOARD, COMPLETE	
67	1-639-101-11	FP-458 FLEXIBLE BOARD	
68	3-942-211-01	HOLDER, LITHIUM	
69	* 1-639-023-11	FA-2 BOARD	
70	* 3-704-367-01	LABEL (US)	
71	* 3-704-256-01	LABEL, CAUTION (US)	

5-3. CABINET (GRIP) ASSEMBLY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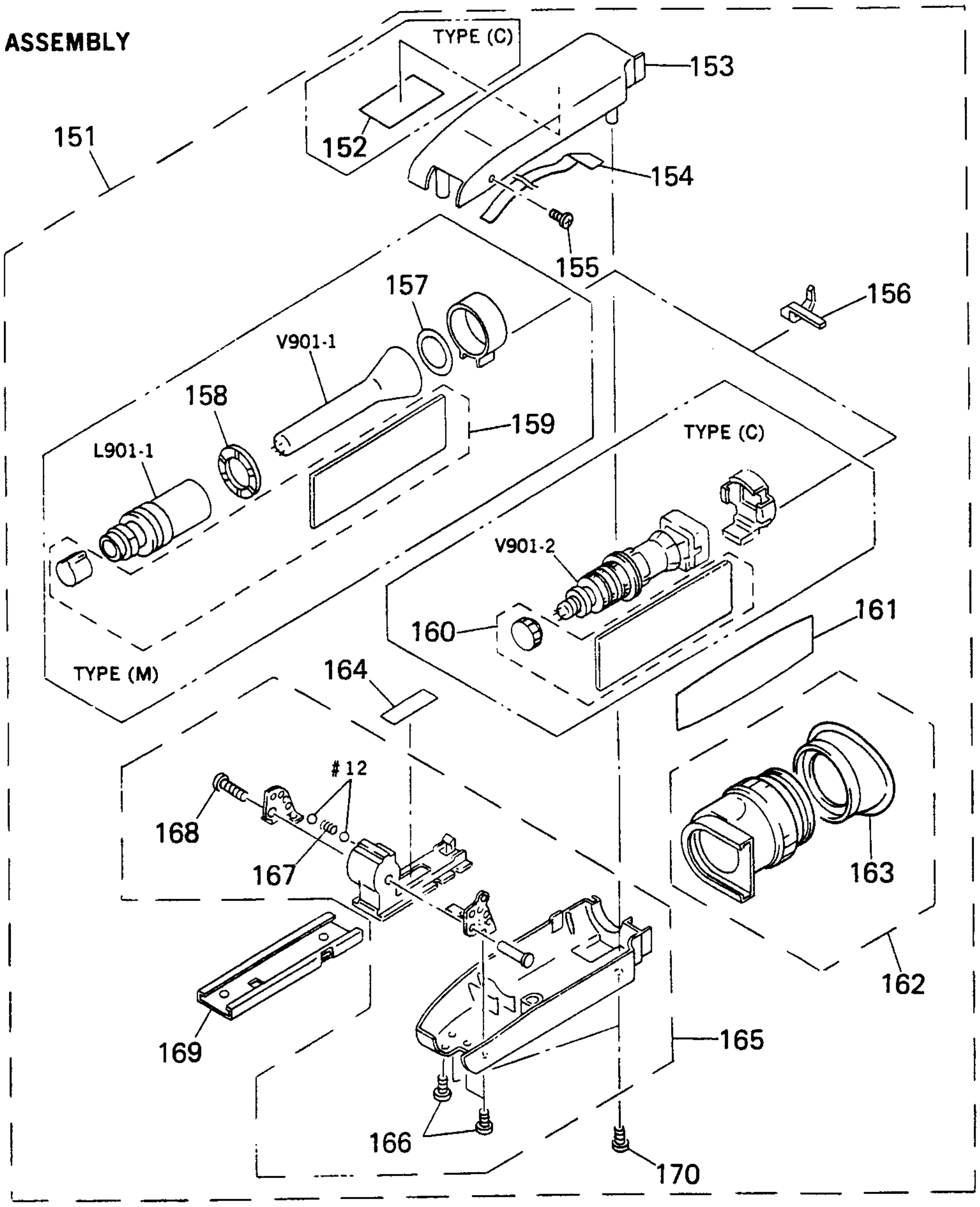
Ref. No.	Part No.	Description	Remark
101	X-3940-494-1	CABINET (G) SUB ASSY	
102	X-3744-708-1	CAP ASSY, HOOD	
103	3-739-866-81	BELT, GRIP	
104	3-724-591-01	PAD, GRIP	
105	3-724-511-01	SHOE, ACCESSORY	
106	3-742-871-11	SCREW (M2X4)	
107	3-744-739-01	NUT (10), LINING PLATE	
108	3-942-183-01	CAP, MICROPHONE	
109	3-742-871-21	SCREW (M2X3)	
110	3-744-704-41	LID, CONNECTOR	
111	3-744-709-01	LOCK, SLIDE	
112	3-744-717-01	SPRING, LOCK	
113	3-713-790-11	SCREW (M2X5), TAPPING, P3	
114	* 3-744-754-01	BRACKET, VF	
115	3-718-233-01	NUT, PLATE	

Ref. No.	Part No.	Description	Remark
116	3-942-205-01	SHEET METAL, TRIPOD	
117	3-744-720-11	SCREW (M2X3)	
118	3-744-735-01	RETAINER, M	
119	3-728-267-01	COVER, 3.5 JACK	
120	3-728-266-01	COVER, 2.5 JACK	
121	* 8-814-268-00	MICROPHONE C-2033 SET	
122	X-3940-491-1	CABINET ASSY, MICROPHONE	
123	3-713-790-21	SCREW (M2X6), TAPPING, P3	
124	* A-7062-708-A	MC-63 BOARD, COMPLETE	
125	* 3-746-251-01	SHEET, Z	
126	X-3744-723-1	BASE ASSY, SP	
127	X-3744-772-1	RETAINER ASSY, Z	
128	* A-7071-393-A	SW-168 BOARD, COMPLETE	
S903	1-572-320-11	SWITCH, PUSH (ZOOM)	

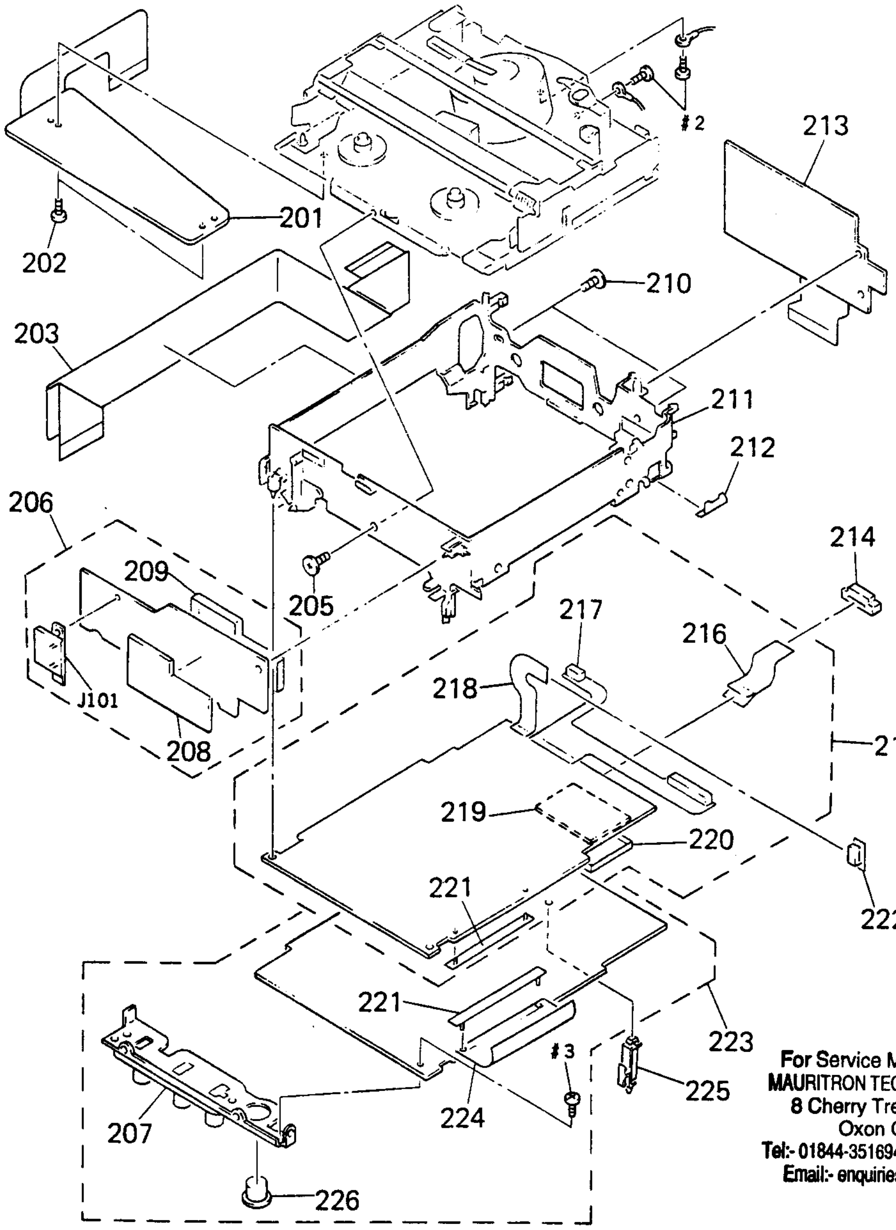
5-4. EVF (M,C) ASSEMBLY



Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	A-7019-290-A	EVF (M) ASSY	
	A-7019-291-A	EVF (C) ASSY	
152	* 3-728-656-01	LABEL, MEASUREMENT	
153	3-744-705-01	CASE, VF (UPPER)	
154	1-634-011-11	FP-264 FLEXIBLE BOARD	
155	3-744-720-11	SCREW (M2X3)	
156	3-744-722-01	GUIDE, VF TALLY	
157	3-724-570-01	RING, CRT FIXED	
158	3-724-549-01	LOCK, CRT	
159	* A-7062-124-A	VF-26 BOARD, COMPLETE	
160	* A-7062-125-A	VF-27 BOARD, COMPLETE	
161	3-744-775-01	INSULATOR, VF	
162	X-3940-369-1	FINDER (S) ASSY, SPORTS	
163	3-749-142-01	EYE CUP	
164	3-744-716-01	COVER, FL	
165	X-3744-701-1	CASE ASSY, LOWER, VF	
166	3-719-381-01	SCREW (M2X4)	
167	3-302-492-00	SPRING, COMPRESSION	
168	3-732-012-11	SCREW (M2X5)	
169	3-744-712-01	SHOE, VF	
170	3-713-790-31	SCREW (M2X8), TAPPING, P3	
L901-1⚠·	1-451-310-21	DEFLECTION YOKE (B/W)	
V901-1⚠·	1-546-085-11	CATHODE-RAY TUBE, B/W	
V901-2⚠·	1-452-482-11	CRT ASSY (M91JYZ60WB)	

5-5. MAIN BOARDS ASSEMBLIES



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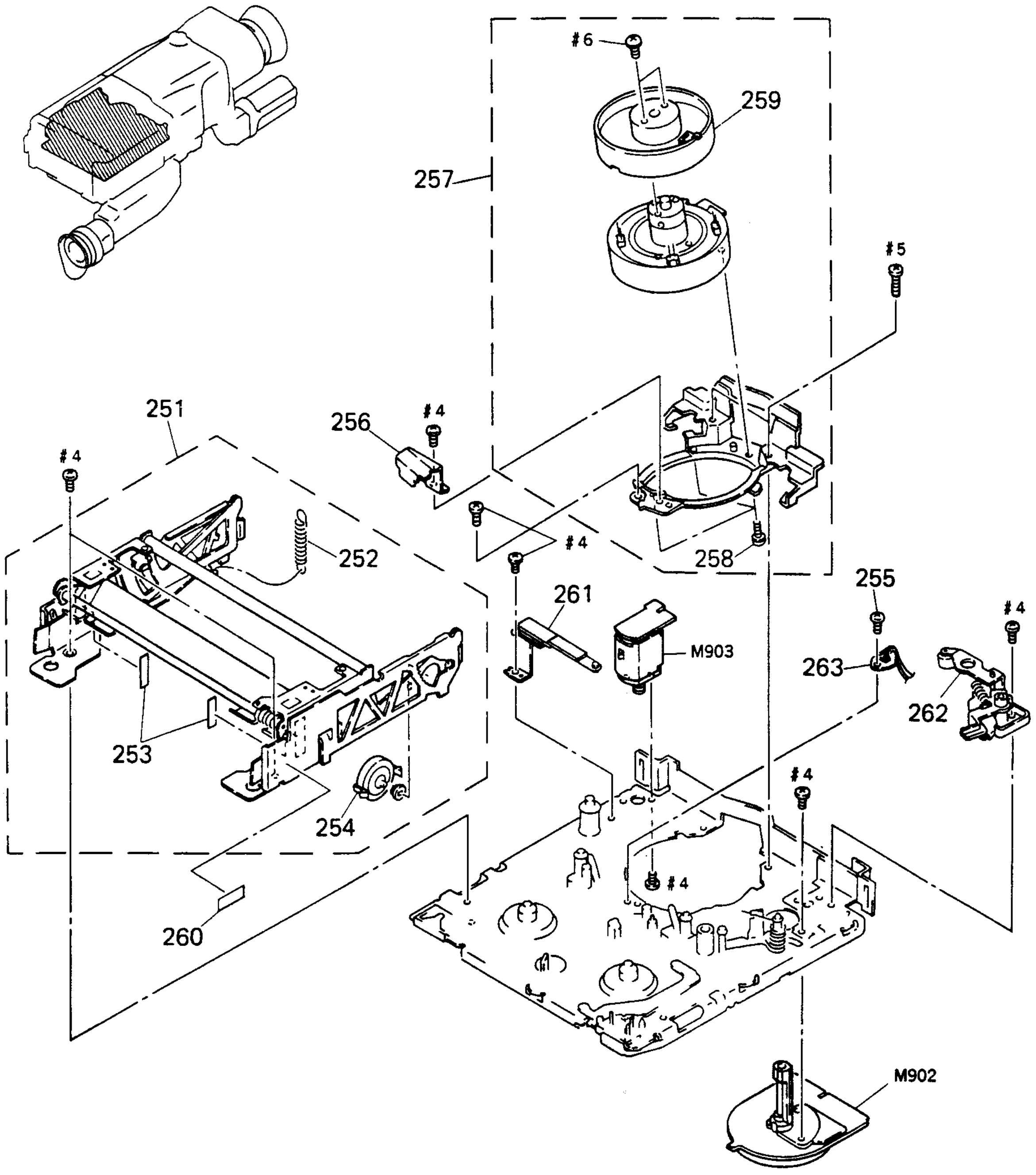
Ref. No.	Part No.	Description	Remark
201	* A-7071-397-A	CC-60 BOARD, COMPLETE	
202	3-713-790-11	SCREW (M2X5), TAPPING, P3	
203	X-3940-504-1	FP-427 ASSY	
205	3-732-791-31	SCREW (M2X3)	
206	* A-7062-701-A	FU-97 BOARD, COMPLETE	
207	A-7091-210-A	PLATE ASSY, JACK	
208	* X-3744-707-1	LID ASSY, REAR, FU SHIELD	
209	* X-3744-706-1	CASE ASSY, SHIELD, FU	
210	3-732-791-01	SCREW (M2X3)	
211	3-744-779-01	FRAME, MD	
212	3-940-504-01	COVER, CAP	
213	* A-7062-704-A	AU-99 BOARD, COMPLETE	
214	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	

Ref. No.	Part No.	Description	Remark
215	* A-7062-702-A	SS-134 BOARD, COMPLETE	
216	1-634-427-11	FP-256 FLEXIBLE BOARD	
217	1-634-428-11	FP-257 FLEXIBLE BOARD	
218	1-634-426-11	FP-255 FLEXIBLE BOARD	
219	A-7068-167-A	HR-10 BOARD, COMPLETE	
220	* X-3744-711-1	LID ASSY, REAR, RP	
221	X-3744-720-1	HOLDER ASSY, FP	
222	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
223	* A-7062-703-A	VA-64 BOARD, COMPLETE	
224	1-634-431-11	FP-260 FLEXIBLE BOARD	
225	3-744-757-01	SUPPORT (10), C	
226	1-566-850-31	CONNECTOR, (S) TERMINAL 4P	
J101	1-537-241-11	TERMINAL BOARD (BATTERY)	

5-6. MECHANICAL CHASSIS ASSEMBLY (1)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Ref. No.	Part No.	Description	Remark
251	X-3728-874-1	CASSETTE COMPARTMENT ASSY (N)	
252	3-728-825-03	SPRING, TENSION	
253	* 3-728-829-01	TAPE	
254	3-728-867-02	DAMPER, OIL	
255	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
256	3-728-868-01	GUARD, GUIDE	
257	A-7048-355-A	DRUM ASSY (DGU-55A-R)	
258	3-686-493-01	SCREW +P (M2X5)	
259	A-7049-305-A	DRUM ASSY, UPPER, ROTARY (DGR-55-R)	
260	* 3-730-176-01	SHEET, MD	
261	X-3728-864-1	GROUND ASSY, SHAFT	
262	A-7040-207-A	ROLLER BLOCK ASSY, HC	
263	1-808-505-12	SENSOR (DEW)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	

5-7. MECHANICAL CHASSIS ASSEMBLY (2)

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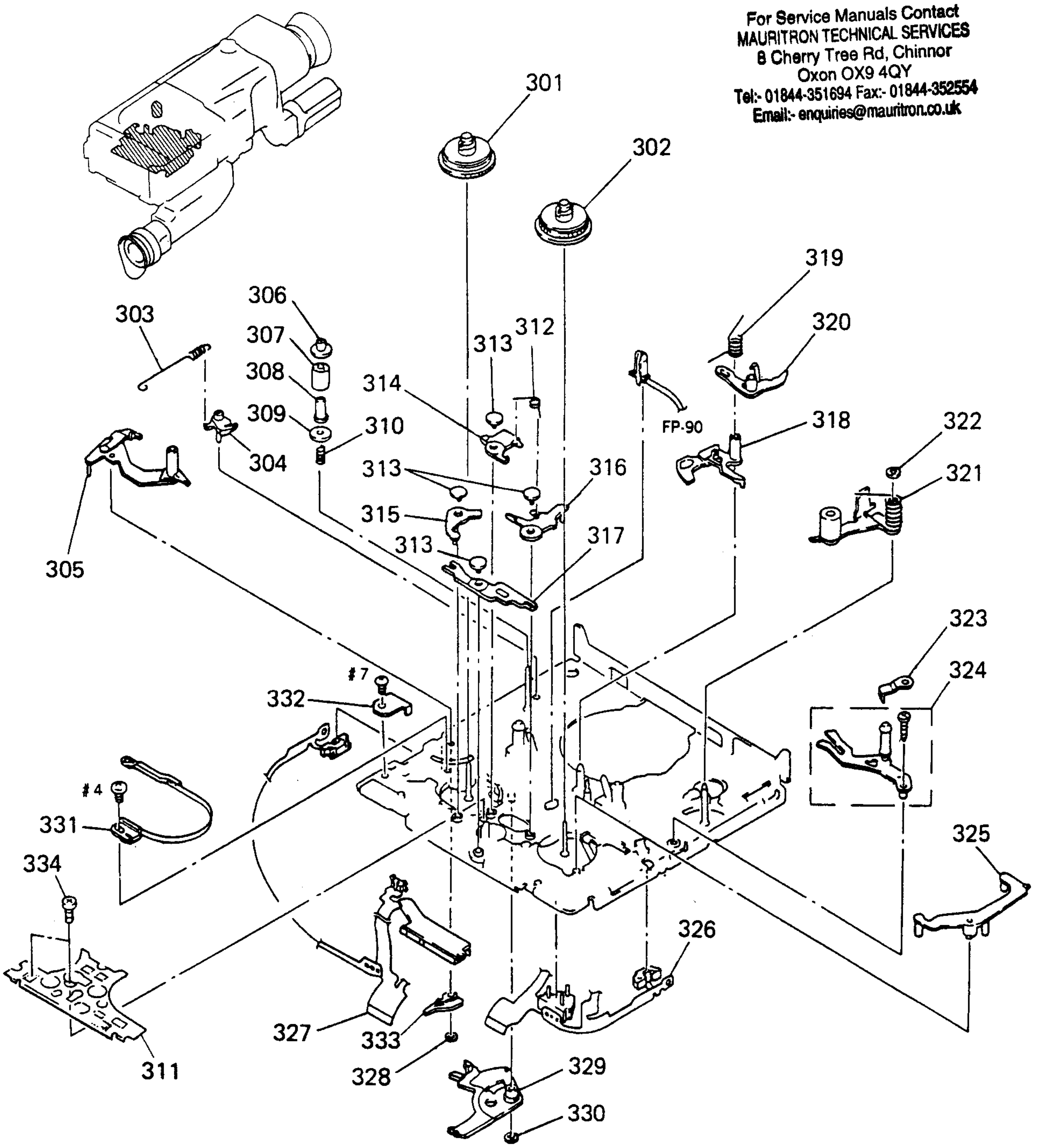
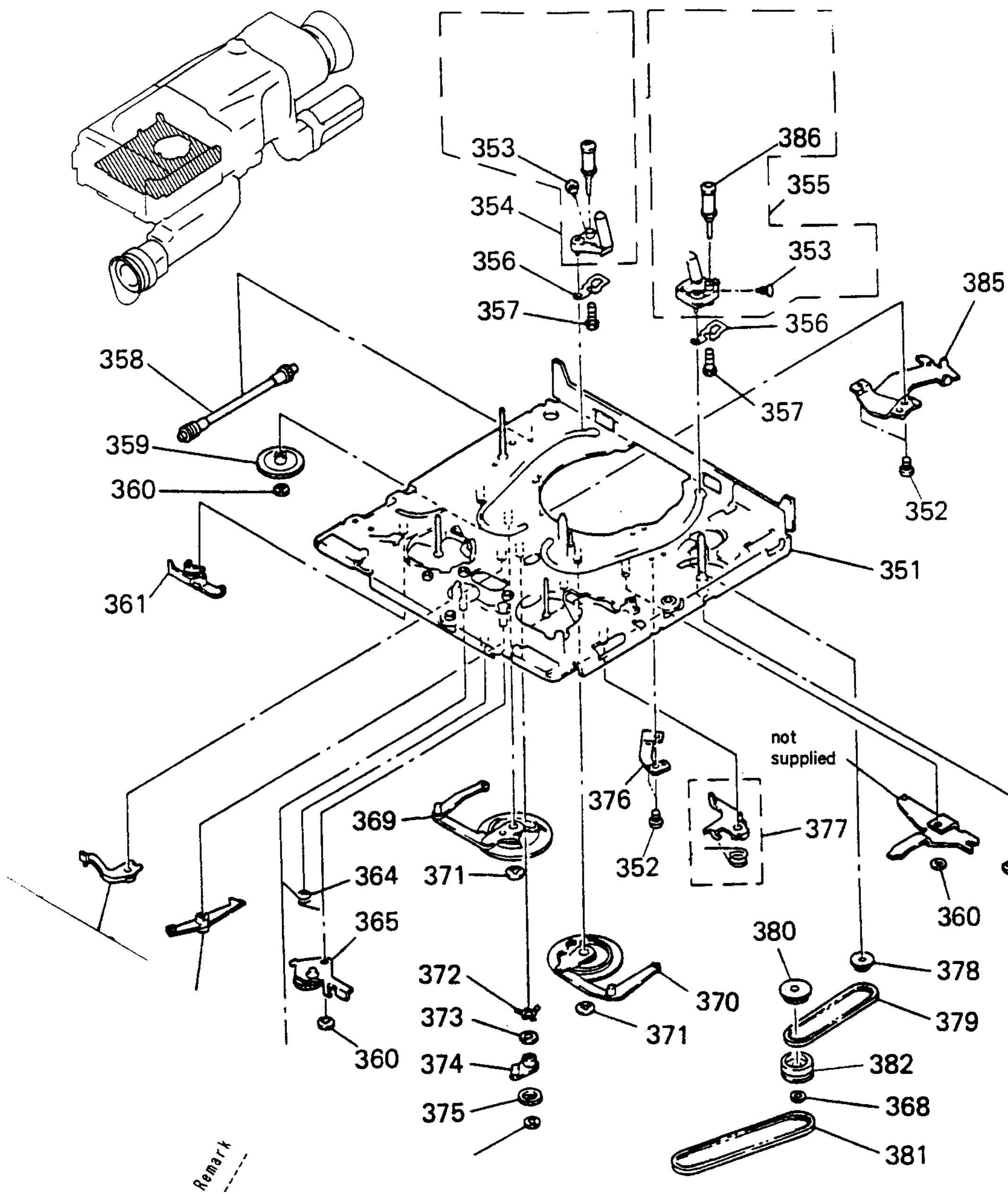


Ref. No.	Part No.	Description	Remark
301	X-3728-851-1	TABLE ASSY, REEL, S	
302	X-3728-855-1	TABLE ASSY, REEL, T	
303	3-736-414-01	SPRING, TENSION	
304	3-728-855-03	ARM, ADJUSTMENT	
305	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
306	3-726-884-01	FLANGE, UPPER, TG2	
307	3-726-883-01	ROLLER, TG2	
308	3-726-885-01	SLEEVE, TG2	
309	3-726-882-02	FLANGE, LOWER, TG2	
310	3-726-886-01	SPRING, COMPRESSION	
311	3-741-195-01	PLATE, BLIND, RK	
312	3-726-866-01	SPRING (ST), TORSION	
313	3-726-858-01	PIN, SHAFT RETAINER	
314	3-728-849-01	BRAKE, S	
315	3-726-852-01	BRAKE, LB	
316	3-728-850-01	BRAKE, T	
317	3-726-853-01	LEVER, LB	
318	3-728-875-01	STOPPER, RK	
319	3-726-864-01	SPRING (RK), TORSION	
320	3-728-852-02	ARM, RK STOPPER	
321	A-7040-219-A	ARM BLOCK ASSY, PINCH	
322	3-669-465-00	WASHER (1.5), STOPPER	
323	3-728-808-01	SPRING, LEAF	
324	X-3728-869-1	ARM ASSY, TG7	
325	3-728-848-01	ARM, LB RELEASE	
326	1-628-061-12	FP-90 FLEXIBLE BOARD	
327	1-628-060-12	FP-89 FLEXIBLE BOARD	
328	3-321-393-11	WASHER, STOPPER	
329	X-3728-863-1	LEVER ASSY, SW	
330	3-726-829-01	WASHER, STOPPER	
331	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
332	3-730-125-01	RETAINER, SW	
333	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
334	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	

5-8. MECHANICAL CHASSIS ASSEMBLY (3)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Ref. No.	Part No.	Description	Remark
³69	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
	3-669-465-00	WASHER (1.5), STOPPER	
	3-726-867-01	SPRING, LEAF	
	3-701-436-21	WASHER, POLYEHTHYLENE	
	3-726-857-03	ARM, UL	
	3-726-856-04	GEAR, UL	
,6	* 3-726-805-01	REINFORCEMENT (TT)	
377	X-3726-808-2	BRAKE ASSY, TS	
378	X-3726-805-1	GEAR ASSY, JOINT	
379	3-728-866-11	BELT (S), TIMING	
380	X-3726-813-1	PULLEY (UPPER) ASSY, MIDWAY	
381	3-741-197-01	BELT (L), TIMING	
382	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
383	X-3726-824-1	ARM ASSY, PINCH SUB	
384	3-726-895-01	SPRING	
385	X-3726-841-1	REINFORCEMENT (SS) ASSY	
386	X-3728-808-4	ROLLER ASSY (U) (SUS), GUIDE	

Remark

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IBLE BOARD
EXIBLE BOARD

STOPPER
R ASSY, SW
HER, STOPPER
AND ASSY, TENSION REGULATOR
RETAINER, SW

-1 STOPPER ASSY, TENSION REGULATOR
-31 SCREW (M1.4X1.8), SPECIAL HEAD

5-9. CAMERA BLOCK ASSEMBLY

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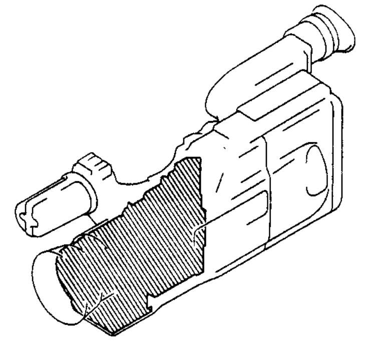

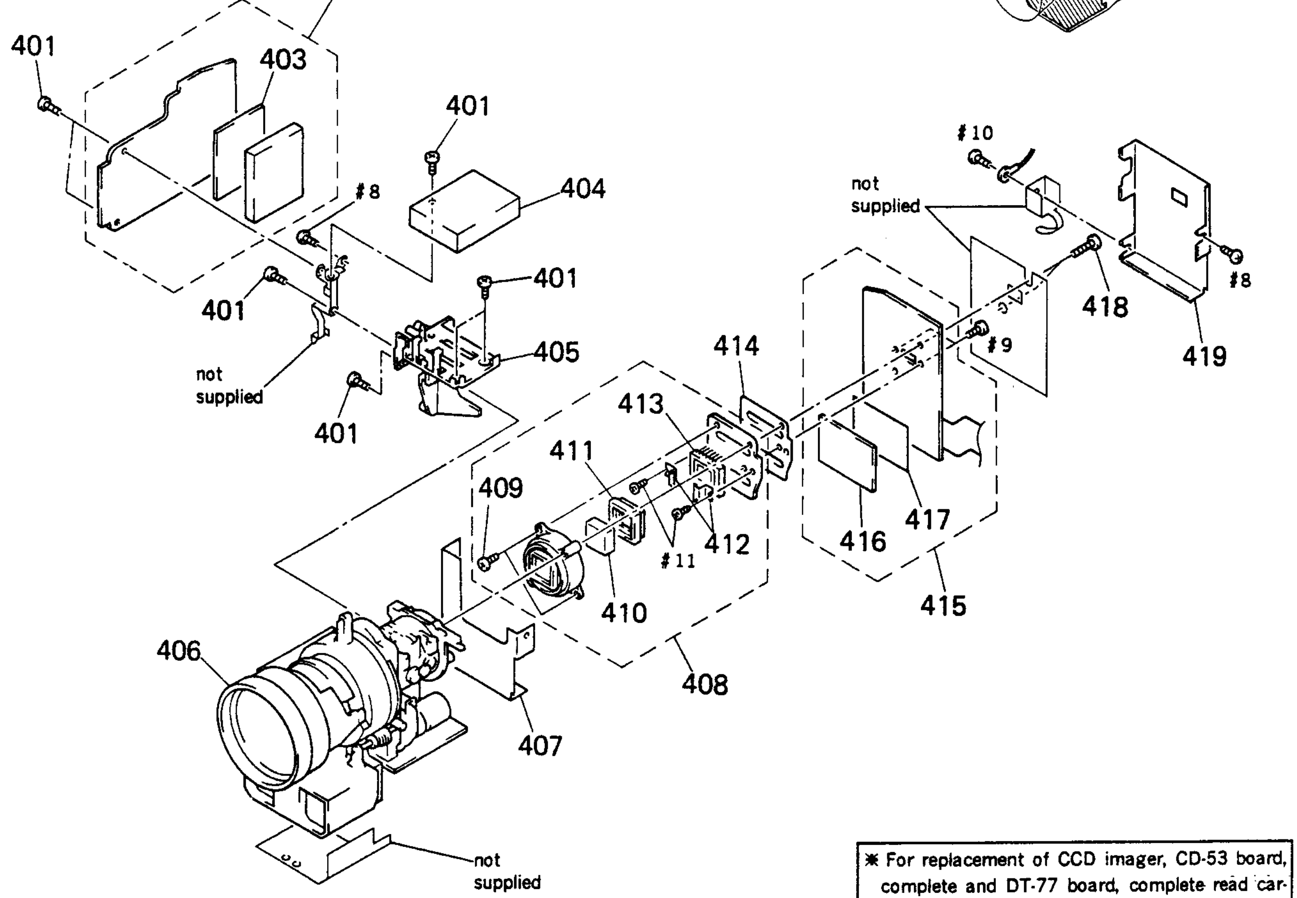
402
401
403
401
404
#8
401
401
405
not supplied
401
#10
not supplied
418
#8
419
#9
414
413
411
409
412
#11
410
416
417
415
408
406
407
not supplied

✱ For replacement of CCD imager, CD-53 board, complete and DT-77 board, complete read carefully the CAUTIONS FOR REPLACEMENT OF CCD IMAGER on page 119.

Ref. No.	Part No.	Description	Remark
401	3-727-903-11	SCREW (2X5), TAPPING, +B	
402	* A-7062-706-A	VC-86 BOARD, COMPLETE	
403	A-7068-185-A	MX-10A BOARD, COMPLETE (HIC)	
404	1-466-230-21	CONVERTER UNIT, D/D	
405	* 3-942-212-01	FRAME, CAMERA	
406	1-547-482-11	LENS, ZOOM (VCL-8508XJ)	
407	* X-3744-702-1	CASE (MAIN) ASSY, SHIELD, C	
408	* A-7030-188-A	CCD ASSY	
409	3-738-519-11	SCREW (M2X3), +B	
410	1-547-381-12	FILTER BLOCK, OPTICAL	
411	* 3-725-177-01	RUBBER, SEAL	
412	* 3-725-175-01	STOPPER, CCD	
413	8-752-604-58	IC ICX038AN-2 (CCD IMAGER)	
414	* 3-725-180-01	SHEET, INSULATING, CCD HOLDER	
415	* A-7062-705-A	CD-53 BOARD, COMPLETE	
416	A-7068-173-A	DT-77F BOARD, COMPLETE (HIC)	
417	* X-3739-811-1	PLATE ASSY, SHIELD, CD	
418	3-335-640-51	SCREW (M2X16)	
419	* X-3744-763-1	LID ASSY, C SHIELD CASE	

AU-99

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD....

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
	* A-7062-704-A	AU-99 BOARD, COMPLETE ********************* (Ref. No 6, 000 Series)			
		< CAPACITOR >			
C401	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
C402	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C403	1-128-013-11	ELECT CHIP	1uF	20%	50V
C404	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C405	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C406	1-124-584-00	ELECT	100uF	20%	10V
C407	1-124-584-00	ELECT	100uF	20%	10V
C408	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C409	1-128-013-11	ELECT CHIP	1uF	20%	50V
C410	1-124-778-00	ELECT CHIP	22uF	20%	6. 3V
C411	1-128-013-11	ELECT CHIP	1uF	20%	50V
C412	1-128-013-11	ELECT CHIP	1uF	20%	50V
C413	1-124-778-00	ELECT CHIP	22uF	20%	6. 3V
C414	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C415	1-164-489-11	CERAMIC CHIP	0. 22uF	10%	16V
C416	1-124-778-00	ELECT CHIP	22uF	20%	6. 3V
C417	1-128-013-11	ELECT CHIP	1uF	20%	50V
C418	1-128-013-11	ELECT CHIP	1uF	20%	50V
C419	1-124-778-00	ELECT CHIP	22uF	20%	6. 3V
C420	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C421	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
C422	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C423	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C424	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C425	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C426	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C427	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C428	1-164-299-11	CERAMIC CHIP	0. 22uF	10%	25V
C429	1-126-603-11	ELECT CHIP	4. 7uF	20%	35V
C430	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C431	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C432	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C433	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C434	1-124-584-00	ELECT	100uF	20%	10V
C435	1-163-809-11	CERAMIC CHIP	0. 047uF	10%	25V
C436	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V
C437	1-162-967-11	CERAMIC CHIP	0. 0033uF	10%	50V
C438	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C439	1-162-965-11	CERAMIC CHIP	0. 0015uF	10%	50V
C440	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C441	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C442	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C443	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C446	1-162-969-11	CERAMIC CHIP	0. 0068uF	10%	25V
C447	1-162-977-11	CERAMIC CHIP	0. 0018uF	10%	50V
C448	1-128-013-11	ELECT CHIP	1uF	20%	50V
C449	1-162-966-11	CERAMIC CHIP	0. 0022uF	10%	50V
C450	1-135-157-21	TANTALUM CHIP	10uF	20%	6. 3V
C451	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C452	1-135-151-21	TANTALUM CHIP	4. 7uF	20%	4V
C453	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C454	1-164-299-11	CERAMIC CHIP	0. 22uF	10%	25V
C455	1-126-603-11	ELECT CHIP	4. 7uF	20%	35V
C456	1-126-209-11	ELECT CHIP	100uF	20%	4V
C457	1-164-299-11	CERAMIC CHIP	0. 22uF	10%	25V
C458	1-135-211-11	TANTALUM CHIP	6. 8uF	20%	4V
C459	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C460	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C461	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C462	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C463	1-126-206-11	ELECT CHIP	100uF	20%	6. 3V
C464	1-163-809-11	CERAMIC CHIP	0. 047uF	10%	25V

Ref. No.	Part No.	Description			Remark
C467	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C468	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C470	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C471	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C473	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C475	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C476	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V
C477	1-128-013-11	ELECT CHIP	1uF	20%	50V
C478	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C479	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C480	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C481	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C482	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C483	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C485	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C486	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C487	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C488	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C490	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C491	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C493	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C494	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C495	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C496	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C497	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C498	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C499	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C563	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C564	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C565	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
		< CONNECTOR >			
CN401	1-569-775-21	PIN, CONNECTOR 5P			
CN402	1-580-056-21	PIN, CONNECTOR 3P			
		< DIODE >			
D401	8-719-941-86	DIODE	DAN202U		
D402	8-719-941-86	DIODE	DAN202U		
D403	8-719-404-46	DIODE	MA110		
D404	8-719-941-86	DIODE	DAN202U		
D405	8-719-977-22	DIODE	DTZ9.1		
D406	8-719-977-22	DIODE	DTZ9.1		
D407	8-719-977-22	DIODE	DTZ9.1		
D408	8-719-977-22	DIODE	DTZ9.1		

Ref. No.	Part No.	Description			Remark
		< FILTER >			
FL401	1-236-837-21	FILTER, BAND PASS			
FL402	1-236-838-21	FILTER, BAND PASS			
		< IC >			
IC401	8-759-823-21	IC	CXA-1536Q		
IC402	8-759-009-22	IC	MC14094BF		
IC403	8-759-823-19	IC	CXA-1488R		
IC404	8-759-823-19	IC	CXA-1488R		
IC405	8-759-300-71	IC	HD14053BF		
IC406	8-759-008-67	IC	MC14066BF		
		< COIL >			
L401	1-410-381-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q401	8-729-905-12	TRANSISTOR	DTA144EU		
Q402	8-729-905-18	TRANSISTOR	DTC144EU		
Q403	8-729-905-12	TRANSISTOR	DTA144EU		
Q404	8-729-905-23	TRANSISTOR	2SA1576-R		
Q405	8-729-905-23	TRANSISTOR	2SA1576-R		
Q408	8-729-907-26	TRANSISTOR	IMX1		
Q409	8-729-905-35	TRANSISTOR	2SC4081-R		
Q410	8-729-907-26	TRANSISTOR	IMX1		
Q411	8-729-907-26	TRANSISTOR	IMX1		
Q412	8-729-905-18	TRANSISTOR	DTC144EU		
Q413	8-729-905-23	TRANSISTOR	2SA1576-R		
Q414	8-729-905-23	TRANSISTOR	2SA1576-R		
Q415	8-729-905-35	TRANSISTOR	2SC4081-R		
Q416	8-729-905-23	TRANSISTOR	2SA1576-R		
Q417	8-729-905-35	TRANSISTOR	2SC4081-R		
Q419	8-729-905-18	TRANSISTOR	DTC144EU		
Q425	8-729-905-18	TRANSISTOR	DTC144EU		
Q426	8-729-905-18	TRANSISTOR	DTC144EU		
Q427	8-729-905-35	TRANSISTOR	2SC4081-R		
Q428	8-729-905-35	TRANSISTOR	2SC4081-R		
		< RESISTOR >			
R401	1-216-864-11	METAL CHIP	0		
R402	1-216-864-11	METAL CHIP	0		
R403	1-216-853-11	METAL CHIP	470K	5%	1/16W
R404	1-216-855-11	METAL CHIP	680K	5%	1/16W
R407	1-216-853-11	METAL CHIP	470K	5%	1/16W
R408	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R410	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R412	1-216-864-11	METAL CHIP	0		
R413	1-216-835-11	METAL CHIP	15K	5%	1/16W
R416	1-216-837-11	METAL CHIP	22K	5%	1/16W

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description			Remark
R419	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R420	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R421	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R422	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R423	1-216-837-11	METAL CHIP	22K	5%	1/16W
R424	1-216-834-11	METAL CHIP	12K	5%	1/16W
R425	1-216-820-11	METAL CHIP	820	5%	1/16W
R426	1-216-821-11	METAL CHIP	1K	5%	1/16W
R427	1-216-821-11	METAL CHIP	1K	5%	1/16W
R428	1-216-815-11	METAL CHIP	330	5%	1/16W
R429	1-216-819-11	METAL CHIP	680	5%	1/16W
R430	1-216-821-11	METAL CHIP	1K	5%	1/16W
R431	1-216-841-11	METAL CHIP	47K	5%	1/16W
R432	1-216-841-11	METAL CHIP	47K	5%	1/16W
R433	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R434	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R435	1-216-841-11	METAL CHIP	47K	5%	1/16W
R436	1-216-841-11	METAL CHIP	47K	5%	1/16W
R437	1-216-835-11	METAL CHIP	15K	5%	1/16W
R439	1-216-840-11	METAL CHIP	39K	5%	1/16W
R440	1-216-864-11	METAL CHIP	0		
R442	1-216-833-11	METAL CHIP	10K	5%	1/16W
R443	1-216-864-11	METAL CHIP	0		
R444	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R445	1-216-837-11	METAL CHIP	22K	5%	1/16W
R446	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W
R447	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R448	1-216-839-11	METAL CHIP	33K	5%	1/16W
R449	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R450	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R451	1-216-837-11	METAL CHIP	22K	5%	1/16W
R452	1-216-835-11	METAL CHIP	15K	5%	1/16W
R454	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R455	1-216-835-11	METAL CHIP	15K	5%	1/16W
R456	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R458	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R462	1-216-839-11	METAL CHIP	33K	5%	1/16W
R463	1-216-833-11	METAL CHIP	10K	5%	1/16W
R464	1-216-835-11	METAL CHIP	15K	5%	1/16W
R466	1-216-840-11	METAL CHIP	39K	5%	1/16W
R467	1-216-864-11	METAL CHIP	0		
R468	1-216-838-11	METAL CHIP	27K	5%	1/16W
R470	1-216-833-11	METAL CHIP	10K	5%	1/16W
R471	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R472	1-216-864-11	METAL CHIP	0		
R473	1-216-837-11	METAL CHIP	22K	5%	1/16W
R474	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W
R476	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R477	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R478	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R479	1-216-815-11	METAL CHIP	330	5%	1/16W
R480	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R484	1-216-839-11	METAL CHIP	33K	5%	1/16W
R485	1-216-833-11	METAL CHIP	10K	5%	1/16W
R488	1-216-845-11	METAL CHIP	100K	5%	1/16W
R491	1-216-810-11	METAL CHIP	120	5%	1/16W
R492	1-216-864-11	METAL CHIP	0		
R494	1-216-810-11	METAL CHIP	120	5%	1/16W
R495	1-216-864-11	METAL CHIP	0		
R496	1-216-814-11	METAL CHIP	270	5%	1/16W
R497	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R498	1-216-833-11	METAL CHIP	10K	5%	1/16W
R499	1-216-841-11	METAL CHIP	47K	5%	1/16W
R560	1-216-841-11	METAL CHIP	47K	5%	1/16W
R561	1-216-833-11	METAL CHIP	10K	5%	1/16W
R562	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R563	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W
R565	1-216-819-11	METAL CHIP	680	5%	1/16W
R567	1-216-813-11	METAL CHIP	220	5%	1/16W
R568	1-216-819-11	METAL CHIP	680	5%	1/16W
R570	1-216-813-11	METAL CHIP	220	5%	1/16W
R571	1-216-864-11	METAL CHIP	0		
R572	1-216-864-11	METAL CHIP	0		
R573	1-216-833-11	METAL CHIP	10K	5%	1/16W
R574	1-216-833-11	METAL CHIP	10K	5%	1/16W
R575	1-216-845-11	METAL CHIP	100K	5%	1/16W
R576	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R577	1-216-864-11	METAL CHIP	0		
R578	1-216-864-11	METAL CHIP	0		
R579	1-216-821-11	METAL CHIP	1K	5%	1/16W
R580	1-216-821-11	METAL CHIP	1K	5%	1/16W
R582	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R583	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R584	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R585	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R586	1-216-097-11	METAL CHIP	100K	5%	1/16W
R587	1-216-864-11	METAL CHIP	0		
R589	1-216-864-11	METAL CHIP	0		
R762	1-216-864-11	METAL CHIP	0		
R764	1-216-864-11	METAL CHIP	0		

< VARIABLE RESISTOR >

RV401	1-238-090-11	RES, ADJ CERMET	10K
RV402	1-238-090-11	RES, ADJ CERMET	10K
RV403	1-238-089-11	RES, ADJ CERMET	4.7K
RV404	1-238-090-11	RES, ADJ CERMET	10K

Ref. No.	Part No.	Description	Remark
RV405	1-238-090-11	RES, ADJ CERMET 10K	
RV406	1-238-089-11	RES, ADJ CERMET 4.7K	
RV407	1-238-090-11	RES, ADJ CERMET 10K	
RV408	1-238-090-11	RES, ADJ CERMET 10K	

< TERMINAL PIN >

Ref. No.	Part No.	Description	Remark
TP401	* 1-535-622-11	PIN, TERMINAL	
TP402	* 1-535-622-11	PIN, TERMINAL	

< FLEXIBLE BOARD >

Ref. No.	Part No.	Description	Remark
W401	1-634-432-11	FP-261 FLEXIBLE BOARD	

****

* A-7071-397-A CC-60 BOARD, COMPLETE

****

(Ref. No 2,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C901	1-135-157-21	TANTALUM CHIP 10uF 20% 6.3V	
C902	1-135-157-21	TANTALUM CHIP 10uF 20% 6.3V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN901	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN902	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q901	8-729-902-93	TRANSISTOR FMG4	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R901	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R902	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R905	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R906	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R907	1-216-025-00	METAL CHIP 100 5% 1/10W	

< FLEXIBLE BOARD >

Ref. No.	Part No.	Description	Remark
W901	1-639-031-11	FP-377 FLEXIBLE BOARD	

****

* A-7062-705-A CD-53 BOARD, COMPLETE

****

(Ref. No 1,000 Series)

A-7068-173-A DT-77F BOARD, COMPLETE (HIC)

3-744-718-01 HOLDER (10), C

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C101	1-126-200-11	ELECT CHIP 10uF 20% 35V	
C102	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C104	1-128-013-11	ELECT CHIP 1uF 20% 50V	
C105	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C107	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C110	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C111	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C112	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C113	1-128-013-11	ELECT CHIP 1uF 20% 50V	
C114	1-128-008-11	ELECT CHIP 3.3uF 20% 35V	
C115	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C121	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C122	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C123	1-135-091-00	TANTAL. CHIP 1uF 20% 16V	
C124	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C125	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C126	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C127	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C128	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C129	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C130	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C131	1-162-638-11	CERAMIC CHIP 1uF 16V	
C133	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C141	1-162-942-11	CERAMIC CHIP 12PF 5% 50V	
C142	1-135-145-11	TANTALUM CHIP 0.47uF 10% 25V	
C144	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C147	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C187	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C188	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C189	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C190	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C191	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C192	1-126-100-11	ELECT 10uF 20% 6.3V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	* 1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P	

< TRIMMER >

Ref. No.	Part No.	Description	Remark
CT122	1-141-421-11	CAP, ADJ	

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D101	8-719-404-46	DIODE MA110	
D102	8-719-404-52	DIODE MA143	
D122	8-719-404-32	DIODE MA141WA	
D123	8-719-404-46	DIODE MA110	
D124	8-719-404-32	DIODE MA141WA	
D126	8-719-404-46	DIODE MA110	
D128	8-719-404-46	DIODE MA110	
		< IC >	
IC121	8-752-326-08	IC CXD1159Q	
		< COIL >	
L101	1-412-063-21	INDUCTOR, CHIP 68uH	
L121	1-412-058-11	INDUCTOR, CHIP 10uH	
L122	1-412-058-11	INDUCTOR, CHIP 10uH	
L123	1-410-381-11	INDUCTOR, CHIP 10uH	
L182	1-412-058-11	INDUCTOR, CHIP 10uH	
L183	1-412-052-21	INDUCTOR, CHIP 1uH	
L184	1-412-058-11	INDUCTOR, CHIP 10uH	
		< TRANSISTOR >	
Q101	8-765-420-02	TRANSISTOR 2SK300-3	
Q102	8-729-905-35	TRANSISTOR 2SC4081-R	
Q121	8-729-907-47	TRANSISTOR IMZ1T108	
Q122	8-729-402-78	TRANSISTOR XN6401	
Q123	8-729-402-19	TRANSISTOR XN6501	
Q125	8-729-905-35	TRANSISTOR 2SC4081-R	
Q126	8-729-907-47	TRANSISTOR IMZ1T108	
Q129	8-729-905-23	TRANSISTOR 2SA1576-R	
Q131	8-729-907-47	TRANSISTOR IMZ1T108	
Q132	8-729-907-47	TRANSISTOR IMZ1T108	
Q133	8-729-907-47	TRANSISTOR IMZ1T108	
Q135	8-729-907-47	TRANSISTOR IMZ1T108	
Q136	8-729-402-45	TRANSISTOR UN5212	
		< RESISTOR >	
R101	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R102	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R103	1-216-820-11	METAL CHIP 820 5% 1/16W	
R104	1-216-809-11	METAL CHIP 100 5% 1/16W	
R105	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R108	1-216-864-11	METAL CHIP 0	
R110	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R111	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R112	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R113	1-216-864-11	METAL CHIP 0	
R114	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R115	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R116	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R117	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R118	1-216-813-11	METAL CHIP 220 5% 1/16W	
R119	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R122	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R124	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R125	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R126	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R127	1-216-820-11	METAL CHIP 820 5% 1/16W	
R128	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R129	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R130	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R131	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R132	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R133	1-216-850-11	METAL CHIP 270K 5% 1/16W	
R136	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R138	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R139	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R140	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R141	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R142	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R143	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R148	1-216-848-11	METAL CHIP 180K 5% 1/16W	
R149	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R153	1-216-864-11	METAL CHIP 0	
R156	1-216-864-11	METAL CHIP 0	
R165	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R166	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R167	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R168	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R170	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R171	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R173	1-216-813-11	METAL CHIP 220 5% 1/16W	
R181	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R182	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R183	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R184	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R186	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R187	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R188	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R189	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R190	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R191	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R192	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R193	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R194	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R195	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R196	1-216-813-11	METAL CHIP 220 5% 1/16W	

Ref. No.	Part No.	Description			Remark
R197	1-216-821-11	METAL CHIP	1K	5%	1/16W
R198	1-216-821-11	METAL CHIP	1K	5%	1/16W
R199	1-216-821-11	METAL CHIP	1K	5%	1/16W
R200	1-216-844-11	METAL CHIP	82K	5%	1/16W
R201	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R202	1-216-643-11	METAL CHIP	470	0.5%	1/10W
R203	1-216-681-11	METAL CHIP	18K	0.5%	1/10W
R204	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R205	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R206	1-216-681-11	METAL CHIP	18K	0.5%	1/10W
R207	1-216-841-11	METAL CHIP	47K	5%	1/16W
R208	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R209	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R210	1-216-833-11	METAL CHIP	10K	5%	1/16W
R215	1-216-842-11	METAL CHIP	56K	5%	1/16W
R216	1-216-833-11	METAL CHIP	10K	5%	1/16W
R217	1-216-833-11	METAL CHIP	10K	5%	1/16W
R220	1-216-835-11	METAL CHIP	15K	5%	1/16W
R221	1-216-840-11	METAL CHIP	39K	5%	1/16W
R222	1-216-833-11	METAL CHIP	10K	5%	1/16W
R226	1-216-864-11	METAL CHIP	0		
R229	1-216-864-11	METAL CHIP	0		
R230	1-216-833-11	METAL CHIP	10K	5%	1/16W
R231	1-216-813-11	METAL CHIP	220	5%	1/16W
R232	1-216-813-11	METAL CHIP	220	5%	1/16W
R233	1-216-838-11	METAL CHIP	27K	5%	1/16W
R234	1-216-841-11	METAL CHIP	47K	5%	1/16W

< FLEXIBLE BOARD >

W102	1-634-435-11	FP-265 FLEXIBLE BOARD

< CRYSTAL >

X121	1-579-042-11	VIBRATOR, CRYSTAL

****

* 1-639-023-11 FA-2 BOARD (Ref.No 5.000 Series)
****

< SWITCH >

S602	1-572-735-11	SWITCH, SLIDE (FOCUS)

****

Ref. No.	Part No.	Description	Remark

* A-7062-707-A FD-44 BOARD, COMPLETE
****
(Ref.No 4.000 Series)

* 3-942-215-01 HOLDER, LCD

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C201	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C202	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C203	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C204	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C205	1-162-971-11	CERAMIC CHIP	0.001uF		50V
C206	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C207	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C208	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C209	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C210	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C211	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C212	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C213	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C214	1-162-971-11	CERAMIC CHIP	0.001uF		50V
C215	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C216	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C217	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C218	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C219	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C220	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C221	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C222	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C223	1-135-215-21	TANTAL. CHIP	6.8uF	20%	16V
C224	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C230	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C231	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C300	1-135-145-11	TANTALUM CHIP	0.47uF	10%	25V
C301	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C302	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C303	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C304	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C309	1-135-145-11	TANTALUM CHIP	0.47uF	10%	25V
C310	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C311	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C312	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C313	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C332	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C333	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C334	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C335	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description	Remark
C338	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C339	1-135-145-11	TANTALUM CHIP 0.47uF 10%	25V
C340	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C341	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C342	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C343	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C344	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C345	1-164-337-11	CERAMIC CHIP 2.2uF	16V
C346	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C347	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C348	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C349	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C350	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C351	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C352	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C353	1-162-638-11	CERAMIC CHIP 1uF	16V
C354	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C355	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C356	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C357	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C361	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C370	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C371	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
C372	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
C380	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C381	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C382	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
C383	1-162-965-11	CERAMIC CHIP 0.0015uF 10%	50V
C384	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
		< CONNECTOR >	
CN201	1-569-035-11	CONNECTOR, FPC (ZIF) 30P	
CN202	* 1-566-759-11	PIN, CONNECTOR (PC BOARD) 4P	
CN204	* 1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	
CN2051	1-569-532-11	HOUSING, CONNECTOR 30P	
		< TRIMMER >	
CT201	1-141-331-11	CAP, CHIP TRIMMER	
CT301	1-141-331-11	CAP, CHIP TRIMMER	
CT302	1-141-331-11	CAP, CHIP TRIMMER	
		< DIODE >	
D201	8-719-940-45	DIODE DWA010	
D202	8-719-404-46	DIODE MA110	
D203	⚠· 8-719-938-72	DIODE SB01-05CP	
D204	8-719-420-36	DIODE MA151A	
D205	8-719-941-86	DIODE DAN202U	
D213	8-719-404-46	DIODE MA110	
D301	8-719-404-46	DIODE MA110	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC201	8-759-153-53	IC uPD75316GF-117-3B9	
IC202	8-759-999-02	IC TL1596CD	
IC203	8-759-145-63	IC uPD7564G-540	
IC205	8-759-937-54	IC S-81250HG-RD-S	
IC206	8-759-937-56	IC S-8054ALB-LM-S	
IC301	8-759-998-30	IC CF79028PG	
IC302	8-752-326-23	IC CXK58257M-10L	
IC303	8-752-039-49	IC CXA1393AN	
IC304	8-759-634-47	IC M51285BGP	
		< COIL >	
L201	1-412-058-11	INDUCTOR CHIP 10uH	
L202	1-410-393-11	INDUCTOR CHIP 100uH	
L300	1-412-058-11	INDUCTOR CHIP 10uH	
L301	1-412-187-11	INDUCTOR 18uH	
L302	1-410-377-31	INDUCTOR CHIP 4.7uH	
L310	1-410-377-31	INDUCTOR CHIP 4.7uH	
L311	1-410-393-11	INDUCTOR CHIP 100uH	
		< DISPLAY PANEL >	
ND201	1-809-336-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< TRANSISTOR >	
Q201	8-729-904-20	TRANSISTOR FMA2	
Q202	8-729-905-18	TRANSISTOR DTC144EU	
Q203	8-729-905-24	TRANSISTOR 2SA1576-S	
Q204	8-729-905-15	TRANSISTOR DTC144WU	
Q205	⚠· 8-729-109-44	TRANSISTOR 2SK94	
Q206	8-729-402-78	TRANSISTOR XN6401	
Q207	8-729-402-19	TRANSISTOR XN6501	
Q208	8-729-402-78	TRANSISTOR XN6401	
Q209	8-729-403-10	TRANSISTOR XN6215	
Q210	8-729-905-XX	TRANSISTOR DTC114TU	
Q211	8-729-100-66	TRANSISTOR 2SC1623	
Q212	8-729-905-XX	TRANSISTOR DTC114TU	
Q213	8-729-905-18	TRANSISTOR DTC144EU	
Q214	8-729-905-12	TRANSISTOR DTA144EU	
Q301	8-729-925-91	TRANSISTOR DTC115EU	
Q311	8-729-905-35	TRANSISTOR 2SC4081-R	
Q312	8-729-905-35	TRANSISTOR 2SC4081-R	
Q313	8-729-905-18	TRANSISTOR DTC144EU	
Q314	8-729-905-35	TRANSISTOR 2SC4081-R	
Q315	8-729-905-18	TRANSISTOR DTC144EU	
Q317	8-729-905-24	TRANSISTOR 2SA1576-S	
Q318	8-729-905-24	TRANSISTOR 2SA1576-S	
Q319	8-729-905-35	TRANSISTOR 2SC4081-S	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R201	1-216-821-11	METAL CHIP	1K	5%	1/16W
R202	1-216-821-11	METAL CHIP	1K	5%	1/16W
R203	1-216-821-11	METAL CHIP	1K	5%	1/16W
R204	1-216-821-11	METAL CHIP	1K	5%	1/16W
R207	1-216-821-11	METAL CHIP	1K	5%	1/16W
R208	1-216-833-11	METAL CHIP	10K	5%	1/16W
R209	1-216-833-11	METAL CHIP	10K	5%	1/16W
R210	1-216-821-11	METAL CHIP	1K	5%	1/16W
R219	1-216-864-11	METAL CHIP	0		
R220	1-216-819-11	METAL CHIP	680	5%	1/16W
R221	1-216-809-11	METAL CHIP	100	5%	1/16W
R222	1-216-821-11	METAL CHIP	1K	5%	1/16W
R223	1-216-821-11	METAL CHIP	1K	5%	1/16W
R224	1-216-821-11	METAL CHIP	1K	5%	1/16W
R225	1-216-851-11	METAL CHIP	330K	5%	1/16W
R230	1-216-864-11	METAL CHIP	0		
R231	1-216-817-11	METAL CHIP	470	5%	1/16W
R242	1-216-841-11	METAL CHIP	47K	5%	1/16W
R244	1-216-821-11	METAL CHIP	1K	5%	1/16W
R245	1-216-821-11	METAL CHIP	1K	5%	1/16W
R246	1-216-833-11	METAL CHIP	10K	5%	1/16W
R247	1-216-833-11	METAL CHIP	10K	5%	1/16W
R248	1-216-833-11	METAL CHIP	10K	5%	1/16W
R249	1-216-833-11	METAL CHIP	10K	5%	1/16W
R250	1-216-596-11	METAL GLAZE	2. 7K	1%	1/10W
R251	1-216-833-11	METAL CHIP	10K	5%	1/16W
R252	1-216-845-11	METAL CHIP	100K	5%	1/16W
R253	1-216-833-11	METAL CHIP	10K	5%	1/16W
R254	1-216-833-11	METAL CHIP	10K	5%	1/16W
R255	1-216-821-11	METAL CHIP	1K	5%	1/16W
R256	1-216-833-11	METAL CHIP	10K	5%	1/16W
R257	1-216-833-11	METAL CHIP	10K	5%	1/16W
R258	1-216-833-11	METAL CHIP	10K	5%	1/16W
R266	1-216-845-11	METAL CHIP	100K	5%	1/16W
R267	1-216-833-11	METAL CHIP	10K	5%	1/16W
R269	1-216-843-11	METAL CHIP	68K	5%	1/16W
R270	1-216-839-11	METAL CHIP	33K	5%	1/16W
R271	1-216-861-11	METAL CHIP	2. 2M	5%	1/16W
R272	⚠ 1-216-809-11	METAL CHIP	100	5%	1/16W
R273	1-216-845-11	METAL CHIP	100K	5%	1/16W
R274	1-216-845-11	METAL CHIP	100K	5%	1/16W
R275	1-216-833-11	METAL CHIP	10K	5%	1/16W
R276	1-216-851-11	METAL CHIP	330K	5%	1/16W
R277	1-216-845-11	METAL CHIP	100K	5%	1/16W
R278	1-216-845-11	METAL CHIP	100K	5%	1/16W
R279	1-216-845-11	METAL CHIP	100K	5%	1/16W
R280	1-216-845-11	METAL CHIP	100K	5%	1/16W
R281	1-216-852-11	METAL CHIP	390K	5%	1/16W
R282	1-216-857-11	METAL CHIP	1M	5%	1/16W
R283	1-216-857-11	METAL CHIP	1M	5%	1/16W
R284	1-216-855-11	METAL CHIP	680K	5%	1/16W
R285	1-216-855-11	METAL CHIP	680K	5%	1/16W
R286	1-216-845-11	METAL CHIP	100K	5%	1/16W
R287	1-216-821-11	METAL CHIP	1K	5%	1/16W
R288	1-216-841-11	METAL CHIP	47K	5%	1/16W
R289	1-216-841-11	METAL CHIP	47K	5%	1/16W
R290	1-216-821-11	METAL CHIP	1K	5%	1/16W
R295	1-216-821-11	METAL CHIP	1K	5%	1/16W
R296	1-216-814-11	METAL CHIP	270	5%	1/16W
R297	1-216-814-11	METAL CHIP	270	5%	1/16W
R298	1-216-817-11	METAL CHIP	470	5%	1/16W
R299	1-216-805-11	METAL CHIP	47	5%	1/16W
R300	1-216-833-11	METAL CHIP	10K	5%	1/16W
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W
R306	1-216-833-11	METAL CHIP	10K	5%	1/16W
R308	1-216-833-11	METAL CHIP	10K	5%	1/16W
R311	1-216-833-11	METAL CHIP	10K	5%	1/16W
R312	1-216-833-11	METAL CHIP	10K	5%	1/16W
R320	1-216-823-11	METAL CHIP	1. 5K	5%	1/16W
R321	1-216-833-11	METAL CHIP	10K	5%	1/16W
R322	1-216-845-11	METAL CHIP	100K	5%	1/16W
R324	1-216-843-11	METAL CHIP	68K	5%	1/16W
R331	1-216-845-11	METAL CHIP	100K	5%	1/16W
R332	1-216-814-11	METAL CHIP	270	5%	1/16W
R333	1-216-806-11	METAL GLAZE	56	5%	1/16W
R334	1-216-821-11	METAL CHIP	1K	5%	1/16W
R335	1-216-823-11	METAL CHIP	1. 5K	5%	1/16W
R337	1-216-864-11	METAL CHIP	0		
R339	1-216-857-11	METAL CHIP	1M	5%	1/16W
R340	1-216-837-11	METAL CHIP	22K	5%	1/16W
R341	1-216-838-11	METAL CHIP	27K	5%	1/16W
R342	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W
R343	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W
R344	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W
R345	1-216-826-11	METAL CHIP	2. 7K	5%	1/16W
R346	1-216-826-11	METAL CHIP	2. 7K	5%	1/16W
R347	1-216-833-11	METAL CHIP	10K	5%	1/16W
R348	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W
R349	1-216-837-11	METAL CHIP	22K	5%	1/16W
R350	1-216-839-11	METAL CHIP	33K	5%	1/16W
R351	1-216-845-11	METAL CHIP	100K	5%	1/16W
R352	1-216-847-11	METAL CHIP	150K	5%	1/16W
R356	1-216-822-11	METAL CHIP	1. 2K	5%	1/16W
R357	1-216-840-11	METAL CHIP	39K	5%	1/16W
R358	1-216-840-11	METAL CHIP	39K	5%	1/16W
R359	1-216-831-11	METAL CHIP	6. 8K	5%	1/16W

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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Email:- enquiries@mauritron.co.uk

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R360	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R361	1-216-817-11	METAL CHIP 470 5% 1/16W	
R364	1-216-815-11	METAL CHIP 330 5% 1/16W	
R365	1-216-823-11	METAL CHIP 1. 5K 5% 1/16W	
R366	1-216-826-11	METAL CHIP 2. 7K 5% 1/16W	
R370	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R371	1-216-815-11	METAL CHIP 330 5% 1/16W	
R372	1-216-825-11	METAL CHIP 2. 2K 5% 1/16W	
R373	1-216-823-11	METAL CHIP 1. 5K 5% 1/16W	
R374	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R375	1-216-814-11	METAL CHIP 270 5% 1/16W	
R376	1-216-825-11	METAL CHIP 2. 2K 5% 1/16W	
R377	1-216-825-11	METAL CHIP 2. 2K 5% 1/16W	
R378	1-216-825-11	METAL CHIP 2. 2K 5% 1/16W	
		< NETWORK RESISTOR >	
RB201	1-236-412-11	NETWORK, RES 1. 0K	
RB202	1-236-424-11	NETWORK, RES 10K	
RB203	1-236-424-11	NETWORK, RES 10K	
RB204	1-236-424-11	NETWORK, RES 10K	
RB205	1-236-412-11	NETWORK, RES 1. 0K	
RB208	1-236-424-11	NETWORK, RES 10K	
RB209	1-236-436-11	NETWORK, RES 100K	
RB210	1-236-436-11	NETWORK, RES 100K	
RB211	1-236-412-11	NETWORK, RES 1. 0K	
RB212	1-236-424-11	NETWORK, RES 10K	
RB213	1-236-424-11	NETWORK, RES 10K	
RB214	1-236-436-11	NETWORK, RES 100K	
RB215	1-236-436-11	NETWORK, RES 100K	
		< VARIABLE RESISTOR >	
RV301	1-238-089-11	RES, ADJ CERMET4. 7K	
RV302	1-238-092-11	RES, ADJ CERMET47K	
		< SWITCH >	
S201	1-571-787-11	SWITCH, TACTILE (RESET)	
S202	1-571-787-11	SWITCH, TACTILE (TITLE 1)	
S203	1-571-787-11	SWITCH, TACTILE (TITLE 2)	
S204	1-571-787-11	SWITCH, TACTILE (MEMORY)	
S205	1-571-787-11	SWITCH, TACTILE (COLOR/MODE)	
S206	1-571-787-11	SWITCH, TACTILE (DATE)	
S207	1-571-787-11	SWITCH, TACTILE (TIME)	
S208	1-571-787-11	SWITCH, TACTILE (ZERO MEM)	
S209	1-571-787-11	SWITCH, TACTILE (WHT BAL)	
S210	1-572-319-21	SWITCH, ROTARY (CONTROL)	
S211	1-571-787-11	SWITCH, TACTILE (BRIGHT)	
S212	1-571-787-11	SWITCH, TACTILE (AE)	
S213	1-571-787-41	SWITCH, TACTILE (FADER)	
S215	1-571-787-11	SWITCH, TACTILE (SHUTTER SPEED)	

Ref. No.	Part No.	Description	Remark
S216	1-571-787-11	SWITCH, TACTILE (⬇)	
S217	1-571-754-11	SWITCH, PUSH (1 KEY) (AUTO LOCK)	
		< THERMISTOR >	
TH300	1-800-200-00	THERMISTOR S-3K	
		< CRYSTAL >	
X201	1-527-997-21	VIBRATOR, CRYSTAL (32. 77KHz)	
X202	1-578-713-21	VIBLATOR, CERAMIC (4. 19MHz)	
X203	1-577-163-21	VIBLATOR, CERAMIC (700KHz)	
X301	1-567-900-11	CRYSTAL (14. 318MHz)	
X302	1-578-690-11	VIBRATOR, CERAMIC (500KHz)	

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* A-7071-398-A FK-47 BOARD, COMPLETE
****
(Ref. No 5, 000 Series)

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN501	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P	
		< DIODE >	
D501	8-719-940-45	DIODE DWA010	
		< SWITCH >	
S501	1-571-787-11	SWITCH, TACTILE (MENU)	
S502	1-571-787-11	SWITCH, TACTILE (SLOW)	
S503	1-571-787-11	SWITCH, TACTILE (PLAY)	
S504	1-571-787-11	SWITCH, TACTILE (FRAME (+))	
S505	1-571-787-11	SWITCH, TACTILE (FRAME (-))	
S506	1-571-787-11	SWITCH, TACTILE (PAUSE)	
S507	1-571-787-11	SWITCH, TACTILE (EXECUTE)	
S508	1-572-284-11	SWITCH, SLIDE (REC)	
S509	1-572-283-11	SWITCH, SLIDE (POWER)	
S510	1-571-787-11	SWITCH, TACTILE (STOP)	
S511	1-571-787-11	SWITCH, TACTILE (RIGHT)	
S512	1-571-787-11	SWITCH, TACTILE (DATA SCREEN)	
S513	1-571-787-11	SWITCH, TACTILE (FF)	
S514	1-571-787-11	SWITCH, TACTILE (LEFT)	
S515	1-571-787-11	SWITCH, TACTILE (SELECT)	
S516	1-571-787-11	SWITCH, TACTILE (REW)	
S517	1-571-787-11	SWITCH, TACTILE (EDITSEARCH (+))	
S518	1-571-787-11	SWITCH, TACTILE (EDITSEARCH (-))	

****

Ref. No.	Part No.	Description	Remark
	1-639-030-11	FP-376 FLEXIBLE BOARD ********************* (Ref. No 5,000 Series)	
		< CAPACITOR >	
C601	1-126-154-11	ELECT 47uF 20% 6.3V	
		< DIODE >	
D601	8-719-812-41	LED TLR124, RED	
		< IC >	
IC601	8-741-100-63	IC SBX1619-51	
		< SWITCH >	
S601	1-554-371-51	SWITCH, TACT	
		**	
	1-628-060-12	FP-89 FLEXIBLE BOARD ******************** (Ref. No 5,000 Series)	
	3-728-869-02	HOLDER, SENSOR	
		< DIODE >	
D301	8-719-801-55	DIODE TLP907-0	
		< TRANSISTOR >	
Q301	8-729-906-48	TRANSISTOR EE-TP109	
		< SWITCH >	
S301	1-571-664-11	SWITCH, SLIDE (ENCODER)	
S303	1-571-099-11	SWITCH (CASSETTE DOWN)	
		**	
	1-628-061-12	FP-90 FLEXIBLE BOARD ******************** (Ref. No 5,000 Series)	
	3-728-837-01	HOLDER, LED	
	3-728-869-02	HOLDER, SENSOR	
		< DIODE >	
D302	8-719-801-55	DIODE TLP907-0	
D303	8-719-940-81	DIODE GL-452S	
		< TRANSISTOR >	
Q302	8-729-906-48	TRANSISTOR EE-TP109	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S302	1-571-680-11	SWITCH, PUSE (3 KEY)	
		**	
	* A-7062-701-A	FU-97 BOARD, COMPLETE ********************* (Ref. No 7,000 Series)	
		< CAPACITOR >	
C101	1-124-604-00	ELECT 330uF 20% 10V	
C102	1-128-292-11	ELECT 220uF 20% 10V	
C103	1-128-331-11	ELECT 33uF 20% 10V	
C104	1-124-584-00	ELECT 100uF 20% 10V	
C105	1-124-584-00	ELECT 100uF 20% 10V	
C106	1-128-331-11	ELECT 33uF 20% 10V	
C107	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C108	[illegible]-127-558-11	ELECT(SOLID) 10uF 20% 10V	
C109	1-127-558-11	ELECT(SOLID) 10uF 20% 10V	
C110	1-127-558-11	ELECT(SOLID) 10uF 20% 10V	
C111	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C112	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C113	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C114	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C115	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C116	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C117	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C118	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C119	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C120	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C121	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C122	1-128-331-11	ELECT 33uF 20% 10V	
C124	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C125	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C126	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C127	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
CN101	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P	
CN102	1-569-557-11	CONNECTOR, BOARD TO BOARD 20P	
CN103	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P	
		< DIODE >	
D101	8-719-981-59	DIODE FC805	
D102	8-719-981-56	DIODE SB05W05C-P	
D103	8-719-922-21	DIODE AR2222S	

For Service Manuals Contact
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< FUSE >

Ref. No.	Part No.	Description	Remark
F101 ⚠·	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)	
F102 ⚠·	1-532-778-21	FUSE, MICRO (1.60A/125V)	
F103 ⚠·	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)	

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-759-035-98	IC MC141600FU	

< JACK >

Ref. No.	Part No.	Description	Remark
J101	1-537-241-11	TERMINAL BOARD (BATTERY)	

< COIL >

Ref. No.	Part No.	Description	Remark
L101	1-410-337-11	INDUCTOR 1uH	
L102	1-410-337-11	INDUCTOR 1uH	
L103	1-410-337-11	INDUCTOR 1uH	
L104	1-424-104-11	COIL, CHOKE 10uH	
L105	1-424-104-11	COIL, CHOKE 10uH	
L106	1-424-106-11	COIL, CHOKE 47uH	
L107	1-424-105-11	COIL, CHOKE 22uH	
L108	1-424-106-11	COIL, CHOKE 47uH	
L110	1-412-029-11	INDUCTOR, CHIP 10uH	
L111	1-412-029-11	INDUCTOR, CHIP 10uH	
L112	1-412-029-11	INDUCTOR, CHIP 10uH	
L113	1-412-027-11	INDUCTOR, CHIP 2.2uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-805-25	TRANSISTOR 2SB1121	
Q102	8-729-822-60	TRANSISTOR 2SB1302	
Q103	8-729-805-25	TRANSISTOR 2SB1121	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R101	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R102	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R103	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R104	1-216-033-00	METAL CHIP 220 5% 1/10W	
R105	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R106	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R107	1-216-033-00	METAL CHIP 220 5% 1/10W	
R108	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R109	1-216-033-00	METAL CHIP 220 5% 1/10W	
R110	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R111	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R112	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R113	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R114	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R115	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R116	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R117	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R118	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R119	1-216-041-00	METAL CHIP 470 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-238-088-11	RES, ADJ CERMET 2.2K	
RV102	1-238-092-11	RES, ADJ CERMET 47K	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S101	1-572-284-11	SWITCH, SLIDE (EJECT)	

`************************************************************`

* A-7071-394-A LI-33 BOARD, COMPLETE

`*********************`

(Ref. No 5,000 Series)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN603	1-580-057-11	PIN, CONNECTOR 4P	

< JACK >

Ref. No.	Part No.	Description	Remark
J603	1-550-104-11	HOLDER, BATTERY	

`************************************************************`

* A-7062-708-A MC-63 BOARD, COMPLETE

`*********************`

(Ref. No 6,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C801	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C802	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C803	1-162-638-11	CERAMIC CHIP 1uF 16V	
C804	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C805	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C806	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C807	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C808	1-162-638-11	CERAMIC CHIP 1uF 16V	
C809	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C810	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C811	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C812	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C813	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C815	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C816	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C817	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C818	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C819	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C820	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C821	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C822	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C823	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C824	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C825	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C826	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C827	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C828	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
C829	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
		< CONNECTOR >			
CN802	* 1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P			
		< DIODE >			
D801	8-719-404-46	DIODE MA110-TX			
D802	8-719-977-22	DIODE DTZ9. 1-TT11			
		< IC >			
IC801	8-759-823-42	IC LA7470M-TEL			
		< JACK >			
J801	1-507-899-00	JACK (SMALL TYPE) (EXT MIC)			
J802	1-563-454-11	JACK, MINIATURE (DC OUT)			
		< COIL >			
L801	1-410-369-11	INDUCTOR CHIP	1uH		
L802	1-410-369-11	INDUCTOR CHIP	1uH		
L803	1-410-369-11	INDUCTOR CHIP	1uH		
L804	1-410-369-11	INDUCTOR CHIP	1uH		
L805	1-410-369-11	INDUCTOR CHIP	1uH		
		< TRANSISTOR >			
Q801	8-729-905-18	TRANSISTOR DTC144EU			
Q802	8-729-905-35	TRANSISTOR 2SC4081-R			
		< RESISTOR >			
R801	1-216-831-11	METAL CHIP	6. 8K	5%	1/16W
R802	1-216-819-11	METAL CHIP	680	5%	1/16W
R803	1-216-835-11	METAL CHIP	15K	5%	1/16W
R804	1-216-837-11	METAL CHIP	22K	5%	1/16W
R805	1-216-836-11	METAL CHIP	18K	5%	1/16W
R806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R807	1-216-831-11	METAL CHIP	6. 8K	5%	1/16W
R808	1-216-835-11	METAL CHIP	15K	5%	1/16W
R809	1-216-819-11	METAL CHIP	680	5%	1/16W
R810	1-216-837-11	METAL CHIP	22K	5%	1/16W
R811	1-216-836-11	METAL CHIP	18K	5%	1/16W
R812	1-216-837-11	METAL CHIP	22K	5%	1/16W
R815	1-216-841-11	METAL CHIP	47K	5%	1/16W
R816	1-216-841-11	METAL CHIP	47K	5%	1/16W
R818	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R819	1-216-833-11	METAL CHIP	10K	5%	1/16W
R820	1-216-834-11	METAL CHIP	12K	5%	1/16W
R821	1-216-834-11	METAL CHIP	12K	5%	1/16W
R822	1-216-835-11	METAL CHIP	15K	5%	1/16W
R823	1-216-819-11	METAL CHIP	680	5%	1/16W
R824	1-216-835-11	METAL CHIP	15K	5%	1/16W
R825	1-216-819-11	METAL CHIP	680	5%	1/16W
		< SWITCH >			
S801	1-553-977-00	SWITCH, SLIDE (BUILT IN MIC)			

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* A-7062-702-A SS-134 BOARD, COMPLETE
****
(Ref. No 2. 000 Series)

A-7068-167-A HR-10 BOARD, COMPLETE (HIC)

3-719-381-01 SCREW (M2X4)
* 3-744-790-01 LID, REAR, RP SHIELD
* 3-941-127-01 CASE (2), RP SHIELD

< CAPACITOR >

C001	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C002	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C003	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
C004	1-126-602-11	ELECT CHIP	3. 3uF	20%	50V
C005	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C006	1-162-974-11	CERAMIC CHIP	0..01uF		50V
C007	1-163-059-00	CERAMIC CHIP	0. 01uF		50V
C010	1-124-242-00	ELECT	33uF	20%	25V
C011	1-126-163-11	ELECT	4. 7uF	20%	50V
C012	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C013	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C014	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
C015	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V
C016	1-162-969-11	CERAMIC CHIP	0. 0068uF	10%	25V
C018	1-136-718-11	FILM, CHIP	0. 1uF	5%	25V
C019	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V
C020	1-162-970-11	CERAMIC CHIP	0. 01uF	10%	25V
C021	1-162-967-11	CERAMIC CHIP	0. 0033uF	10%	50V
C022	1-162-967-11	CERAMIC CHIP	0. 0033uF	10%	50V
C023	1-162-967-11	CERAMIC CHIP	0. 0033uF	10%	50V
C025	1-128-006-11	ELECT CHIP	4. 7uF	20%	25V
C026	1-164-330-21	CERAMIC CHIP	0. 22uF	10%	16V
C027	1-164-330-21	CERAMIC CHIP	0. 22uF	10%	16V
C028	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C030	1-135-177-21	TANTALUM CHIP	1uF	20%	20V

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description			Remark
C031	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C032	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C033	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C034	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C035	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C036	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C037	1-162-638-11	CERAMIC CHIP	1uF		16V
C038	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C039	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C041	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C044	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C045	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C046	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C048	1-128-004-11	ELECT CHIP	10uF	20%	16V
C101	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C103	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C105	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C106	1-124-779-00	ELECT CHIP	10uF	20%	16v
C110	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C111	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C112	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C113	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C114	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C115	1-162-997-11	CERAMIC CHIP	10PF	0.5PF	50V
C116	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C118	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C119	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C121	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C150	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C151	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C152	1-128-004-11	ELECT CHIP	10uF	20%	16V
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C154	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C155	1-164-634-11	CERAMIC CHIP	1uF		16V
C156	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C157	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C158	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C159	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C160	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C161	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C162	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C163	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C165	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C166	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C167	1-162-638-11	CERAMIC CHIP	1uF		16V
C168	1-162-638-11	CERAMIC CHIP	1uF		16V
C169	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C170	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C171	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C172	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C173	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C175	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C176	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C177	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C178	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C180	1-164-634-11	CERAMIC CHIP	1uF		16V
C183	1-128-004-11	ELECT CHIP	10uF	20%	16V
C201	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C208	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C210	1-126-425-11	ELECT	10uF	20%	10V
C211	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C212	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C213	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C214	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C215	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C219	1-162-940-11	CERAMIC CHIP	9PF	0.5PF	50V
C222	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V
C225	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C226	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C227	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C228	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C229	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C230	1-128-004-11	ELECT CHIP	10uF	20%	16V
C231	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C232	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C233	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C234	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C235	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C236	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C237	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C242	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C243	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C244	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C245	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C246	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C249	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C252	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C255	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C256	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C257	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C258	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C261	1-162-936-11	CERAMIC CHIP	5PF	0.25PF	50V
C262	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C263	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C267	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C268	1-162-974-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C269	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C270	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C271	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C273	1-128-004-11	ELECT CHIP	10uF	20%	16V
C274	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C275	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C276	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C277	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C278	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C279	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C280	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C281	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C282	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C283	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C284	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C285	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C286	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C288	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C289	1-128-004-11	ELECT CHIP	10uF	20%	16V
C290	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C291	1-128-004-11	ELECT CHIP	10uF	20%	16V
C292	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C293	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C294	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C295	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C296	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C297	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C298	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C299	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C300	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C301	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C304	1-128-004-11	ELECT CHIP	10uF	20%	16V
C305	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C308	1-128-011-11	ELECT CHIP	0.33uF	20%	50V
C309	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C310	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C317	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C318	1-128-004-11	ELECT CHIP	10uF	20%	16V
C319	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C320	1-128-004-11	ELECT CHIP	10uF	20%	16V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C323	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C324	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C329	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C330	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C332	1-126-425-11	ELECT	10uF	20%	10V
C333	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C335	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C336	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C337	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C341	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C342	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C345	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C346	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C347	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C348	1-162-954-11	CERAMIC CHIP	120PF	5%	50V

< CONNECTOR >

CN003	1-569-558-11	CONNECTOR, BOARD TO BOARD 20P
CN004	1-565-878-11	PIN, CONNECTOR (PC BOARD) 6P
CN005	1-569-532-11	HOUSING, CONNECTOR 30P
CN007	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN200	* 1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P

< TRIMMER >

CT101	1-141-368-11	CAP, CHIP TRIMMER
CT102	1-141-368-11	CAP, CHIP TRIMMER

< DIODE >

D001	8-719-941-86	DIODE	DAN202U
D002	8-719-404-46	DIODE	MA110
D101	8-719-949-46	DIODE	1T32
D104	8-719-941-23	DIODE	DA204U
D202	8-719-941-86	DIODE	DAN202U
D203	8-719-941-86	DIODE	DAN202U
D205	8-719-404-46	DIODE	MA110
D208	8-719-941-86	DIODE	DAN202U
D210	8-719-941-86	DIODE	DAN202U
D211	8-719-941-86	DIODE	DAN202U

< IC >

IC001	8-752-818-77	IC	CXP80116-832Q
IC003	8-759-998-98	IC	LM358D
IC004	8-759-148-05	IC	CXA8010M
IC005	8-759-823-65	IC	MCD002AM
IC006	8-759-990-55	IC	CXA8006M
IC007	8-759-008-95	IC	MC14028BF
IC008	8-759-748-72	IC	BR93C46F
IC101	8-759-970-80	IC	MB673198U
IC102	8-759-153-41	IC	uPD6451AGT-611
IC104	8-759-234-20	IC	TC7S08F
IC150	8-752-035-48	IC	CXA1204Q
IC201	8-759-012-00	IC	MC10H116M

For Service Manuals Contact
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Ref. No.	Part No.	Description	Remark
IC202	8-759-998-92	IC LM393D	
IC204	8-759-998-32	IC CXD-2107M	
IC205	8-759-148-49	IC CXA1443N	

< COIL >

Ref. No.	Part No.	Description	Remark
L001	1-412-058-11	INDUCTOR, CHIP 10uH	
L101	1-410-390-11	INDUCTOR, CHIP 56uH	
L102	1-410-393-11	INDUCTOR, CHIP 100uH	
L103	1-408-797-11	INDUCTOR, CHIP 470uH	
L150	1-412-058-11	INDUCTOR, CHIP 10uH	
L151	1-408-795-21	INDUCTOR, CHIP 330uH	
L152	1-412-058-11	INDUCTOR, CHIP 10uH	
L201	1-410-389-31	INDUCTOR, CHIP 47uH	
L205	1-410-384-31	INDUCTOR, CHIP 18uH	
L206	1-410-384-31	INDUCTOR, CHIP 18uH	
L207	1-410-381-11	INDUCTOR, CHIP 10uH	
L208	1-408-793-21	INDUCTOR, CHIP 220uH	
L209	1-408-795-21	INDUCTOR, CHIP 330uH	
L210	1-410-167-41	INDUCTOR, CHIP 820uH	
L211	1-410-387-11	INDUCTOR, CHIP 33uH	
L212	1-410-657-21	INDUCTOR, CHIP 180uH	
L215	1-410-374-11	INDUCTOR, CHIP 2.7uH	
L216	1-410-379-21	INDUCTOR, CHIP 6.8uH	
L217	1-410-379-21	INDUCTOR, CHIP 6.8uH	
L218	1-410-379-21	INDUCTOR, CHIP 6.8uH	
L221	1-408-791-00	INDUCTOR, CHIP 150uH	
L222	1-408-795-21	INDUCTOR, CHIP 330uH	
L225	1-412-058-11	INDUCTOR, CHIP 10uH	
L226	1-410-380-31	INDUCTOR, CHIP 8.2uH	
L227	1-412-058-11	INDUCTOR, CHIP 10uH	
L228	1-410-379-11	INDUCTOR, CHIP 6.8uH	
L229	1-410-382-31	INDUCTOR, CHIP 12uH	
L230	1-410-657-21	INDUCTOR, CHIP 180uH	
L231	1-412-058-11	INDUCTOR, CHIP 10uH	
L232	1-410-386-11	INDUCTOR, CHIP 27uH	
L233	1-410-381-11	INDUCTOR, CHIP 10uH	
L234	1-216-296-00	METAL CHIP 0 5% 1/8W	
L235	1-412-058-11	INDUCTOR, CHIP 10uH	
L236	1-412-058-11	INDUCTOR, CHIP 10uH	

< IC LINK >

Ref. No.	Part No.	Description	Remark
PS101 ⚠	1-532-605-00	LINK, IC 0.4A (ICP-N10)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q001	8-729-907-00	TRANSISTOR DTC114EU	
Q002	8-729-905-12	TRANSISTOR DTA144EU	
Q003	8-729-905-18	TRANSISTOR DTC144EU	
Q004	8-729-820-47	TRANSISTOR 2SB1202FAT	
Q005	8-729-905-35	TRANSISTOR 2SC4081-R	
Q007	8-729-905-35	TRANSISTOR 2SC4081-R	
Q008	8-729-905-35	TRANSISTOR 2SC4081-R	
Q009	8-729-905-35	TRANSISTOR 2SC4081-R	
Q010	8-729-907-03	TRANSISTOR FMG5	
Q011	8-729-905-18	TRANSISTOR DTC144EU	
Q012	8-729-905-18	TRANSISTOR DTC144EU	
Q014	8-729-822-48	TRANSISTOR FC101	
Q017	8-729-907-03	TRANSISTOR FMG5	
Q018	8-729-905-18	TRANSISTOR DTC144EU	
Q023	8-729-921-08	TRANSISTOR DTC144TU	
Q150	8-729-905-23	TRANSISTOR 2SA1576-R	
Q152	8-729-905-35	TRANSISTOR 2SC4081-R	
Q153	8-729-905-23	TRANSISTOR 2SA1576-R	
Q202	8-729-905-35	TRANSISTOR 2SC4081-R	
Q203	8-729-905-35	TRANSISTOR 2SC4081-R	
Q213	8-729-216-22	TRANSISTOR 2SA1162-G	
Q214	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q215	8-729-216-22	TRANSISTOR 2SA1162-G	
Q217	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q218	8-729-905-35	TRANSISTOR 2SC4081-R	
Q222	8-729-905-18	TRANSISTOR DTC144EU	
Q223	8-729-905-35	TRANSISTOR 2SC4081-R	
Q224	8-729-904-07	TRANSISTOR FMG2	
Q225	8-729-905-45	TRANSISTOR DTA143EU	
Q227	8-729-905-35	TRANSISTOR 2SC4081-R	
Q229	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q230	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q231	8-729-905-18	TRANSISTOR DTC144EU	
Q232	8-729-905-18	TRANSISTOR DTC144EU	
Q233	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q234	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q238	8-729-117-31	TRANSISTOR 2SC4177-L5	
Q239	8-729-905-18	TRANSISTOR DTC144EU	
Q240	8-729-905-18	TRANSISTOR DTC144EU	
Q242	8-729-117-31	TRANSISTOR 2SC4177-L5	
Q243	8-729-905-18	TRANSISTOR DTC144EU	
Q244	8-729-140-63	TRANSISTOR 2SA1611-M5M6	
Q247	8-729-905-35	TRANSISTOR 2SC4081-R	
Q248	8-729-903-10	TRANSISTOR FMW1	
Q249	8-729-905-18	TRANSISTOR DTC144EU	
Q250	8-729-905-12	TRANSISTOR DTA144EU	
Q251	8-729-905-35	TRANSISTOR 2SC4081-R	
Q252	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q254	8-729-905-35	TRANSISTOR 2SC4081-R	
Q255	8-729-904-07	TRANSISTOR FMG2	
Q256	8-729-905-12	TRANSISTOR DTA144EU	
Q257	8-729-905-18	TRANSISTOR DTC144EU	
Q258	8-729-903-10	TRANSISTOR FMW1	
Q259	8-729-905-35	TRANSISTOR 2SC4081-R	

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Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description				Remark
Q260	8-729-905-35	TRANSISTOR	2SC4081-R			
Q261	8-729-905-23	TRANSISTOR	2SA1576-R			
Q262	8-729-905-23	TRANSISTOR	2SA1576-R			
Q263	8-729-907-26	TRANSISTOR	IMX1			
Q265	8-729-905-35	TRANSISTOR	2SC4081-R			
Q266	8-729-905-35	TRANSISTOR	2SC4081-R			
Q267	8-729-905-35	TRANSISTOR	2SC4081-R			
Q268	8-729-905-23	TRANSISTOR	2SA1576-R			
Q269	8-729-907-26	TRANSISTOR	IMX1			
Q272	8-729-922-94	TRANSISTOR	DTC143TU			
Q273	8-729-141-48	TRANSISTOR	2SB624-BV345			
Q277	8-729-905-35	TRANSISTOR	2SC4081-R			
Q278	8-729-905-35	TRANSISTOR	2SC4081-R			
Q280	8-729-905-35	TRANSISTOR	2SC4081-R			
Q291	8-729-907-26	TRANSISTOR	IMX1			
Q295	8-729-905-35	TRANSISTOR	2SC4081-R			

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R001	1-216-845-11	METAL CHIP	100K	5%	1/16W
R002	1-216-845-11	METAL CHIP	100K	5%	1/16W
R003	1-216-845-11	METAL CHIP	100K	5%	1/16W
R004	1-216-845-11	METAL CHIP	100K	5%	1/16W
R005	1-216-845-11	METAL CHIP	100K	5%	1/16W
R006	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R007	1-216-845-11	METAL CHIP	100K	5%	1/16W
R008	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R009	1-216-818-11	METAL CHIP	560	5%	1/16W
R010	1-216-833-11	METAL CHIP	10K	5%	1/16W
R011	1-216-833-11	METAL CHIP	10K	5%	1/16W
R012	1-216-821-11	METAL CHIP	1K	5%	1/16W
R013	1-216-864-11	METAL CHIP	0	5%	1/16W
R014	1-216-851-11	METAL CHIP	330K	5%	1/16W
R015	1-216-841-11	METAL CHIP	47K	5%	1/16W
R016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R017	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R018	1-216-850-11	METAL CHIP	270K	5%	1/16W
R019	1-216-851-11	METAL CHIP	330K	5%	1/16W
R021	1-216-833-11	METAL CHIP	10K	5%	1/16W
R022	1-216-025-00	METAL CHIP	100	5%	1/10W
R023	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R024	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R025	1-216-837-11	METAL CHIP	22K	5%	1/16W
R026	1-216-864-11	METAL CHIP	0		
R029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R030	1-216-833-11	METAL CHIP	10K	5%	1/16W
R031	1-216-821-11	METAL CHIP	1K	5%	1/16W
R032	1-216-037-00	METAL CHIP	330	5%	1/10W
R033	1-216-821-11	METAL CHIP	1K	5%	1/16W
R034	1-216-845-11	METAL CHIP	100K	5%	1/16W
R035	1-216-097-00	METAL CHIP	100K	5%	1/10W
R036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R037	1-216-097-00	METAL CHIP	100K	5%	1/10W
R038	1-216-833-11	METAL CHIP	10K	5%	1/16W
R039	1-216-833-11	METAL CHIP	10K	5%	1/16W
R040	1-216-833-11	METAL CHIP	10K	5%	1/16W
R041	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R042	1-216-864-11	METAL CHIP	0		
R043	1-217-671-11	METAL CHIP	1	5%	1/10W
R044	1-217-671-11	METAL CHIP	1	5%	1/10W
R045	1-217-671-11	METAL CHIP	1	5%	1/10W
R046	1-217-671-11	METAL CHIP	1	5%	1/10W
R049	1-216-841-11	METAL CHIP	47K	5%	1/16W
R050	1-216-835-11	METAL CHIP	15K	5%	1/16W
R051	1-216-844-11	METAL CHIP	82K	5%	1/16W
R053	1-216-833-11	METAL CHIP	10K	5%	1/16W
R054	1-216-838-11	METAL CHIP	27K	5%	1/16W
R055	1-216-838-11	METAL CHIP	27K	5%	1/16W
R056	1-216-838-11	METAL CHIP	27K	5%	1/16W
R057	1-216-336-11	METAL CHIP	47K	1%	1/10W
R058	1-216-336-11	METAL CHIP	47K	1%	1/10W
R059	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R060	1-216-845-11	METAL CHIP	100K	5%	1/16W
R061	1-216-833-11	METAL CHIP	10K	5%	1/16W
R063	1-216-037-00	METAL CHIP	330	5%	1/10W
R066	1-216-857-11	METAL CHIP	1M	5%	1/16W
R068	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R070	1-216-845-11	METAL CHIP	100K	5%	1/16W
R073	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R074	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R075	1-216-839-11	METAL CHIP	33K	5%	1/16W
R076	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R077	1-216-837-11	METAL CHIP	22K	5%	1/16W
R078	1-216-821-11	METAL CHIP	1K	5%	1/16W
R080	1-216-837-11	METAL CHIP	22K	5%	1/16W
R081	1-216-864-11	METAL CHIP	0		
R082	1-216-833-11	METAL CHIP	10K	5%	1/16W
R083	1-216-833-11	METAL CHIP	10K	5%	1/16W
R084	1-216-833-11	METAL CHIP	10K	5%	1/16W
R085	1-216-833-11	METAL CHIP	10K	5%	1/16W
R086	1-216-833-11	METAL CHIP	10K	5%	1/16W
R087	1-216-833-11	METAL CHIP	10K	5%	1/16W
R088	1-216-833-11	METAL CHIP	10K	5%	1/16W
R089	1-216-833-11	METAL CHIP	10K	5%	1/16W
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W
R095	1-216-821-11	METAL CHIP	1K	5%	1/16W
R097	1-216-833-11	METAL CHIP	10K	5%	1/16W
R098	1-216-833-11	METAL CHIP	10K	5%	1/16W

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SS-134

Ref. No.	Part No.	Description			Remark
R099	1-216-841-11	METAL CHIP	47K	5%	1/16W
R100	1-216-843-11	METAL CHIP	68K	5%	1/16W
R105	1-216-821-11	METAL CHIP	1K	5%	1/16W
R106	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W
R108	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-821-11	METAL CHIP	1K	5%	1/16W
R110	1-216-821-11	METAL CHIP	1K	5%	1/16W
R111	1-216-821-11	METAL CHIP	1K	5%	1/16W
R112	1-216-821-11	METAL CHIP	1K	5%	1/16W
R113	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R114	1-216-864-11	METAL CHIP	0		
R120	1-216-833-11	METAL CHIP	10K	5%	1/16W
R121	1-216-845-11	METAL CHIP	100K	5%	1/16W
R122	1-216-845-11	METAL CHIP	100K	5%	1/16W
R123	1-216-839-11	METAL CHIP	33K	5%	1/16W
R124	1-216-845-11	METAL CHIP	100K	5%	1/16W
R125	1-216-838-11	METAL CHIP	27K	5%	1/16W
R127	1-216-833-11	METAL CHIP	10K	5%	1/16W
R128	1-216-864-11	METAL CHIP	0		
R130	1-216-842-11	METAL CHIP	56K	5%	1/16W
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W
R134	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R136	1-216-864-11	METAL CHIP	0		
R137	1-216-857-11	METAL CHIP	1M	5%	1/16W
R144	1-216-841-11	METAL CHIP	47K	5%	1/16W
R145	1-216-841-11	METAL CHIP	47K	5%	1/16W
R147	1-216-833-11	METAL CHIP	10K	5%	1/16W
R148	1-216-837-11	METAL CHIP	22K	5%	1/16W
R150	1-216-857-11	METAL CHIP	1M	5%	1/16W
R151	1-216-820-11	METAL CHIP	820	5%	1/16W
R152	1-216-817-11	METAL CHIP	470	5%	1/16W
R153	1-216-817-11	METAL CHIP	470	5%	1/16W
R154	1-216-839-11	METAL CHIP	33K	5%	1/16W
R155	1-216-818-11	METAL CHIP	560	5%	1/16W
R156	1-216-814-11	METAL CHIP	270	5%	1/16W
R157	1-216-840-11	METAL CHIP	39K	5%	1/16W
R158	1-216-812-11	METAL CHIP	180	5%	1/16W
R161	1-216-833-11	METAL CHIP	10K	5%	1/16W
R162	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R163	1-216-837-11	METAL CHIP	22K	5%	1/16W
R164	1-216-837-11	METAL CHIP	22K	5%	1/16W
R167	1-216-837-11	METAL CHIP	22K	5%	1/16W
R168	1-216-864-11	METAL CHIP	0		
R169	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R170	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R171	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R172	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R173	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R174	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R175	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R176	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R180	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R184	1-216-821-11	METAL CHIP	1K	5%	1/16W
R185	1-216-833-11	METAL CHIP	10K	5%	1/16W
R186	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R188	1-216-864-11	METAL CHIP	0		
R190	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R193	1-216-833-11	METAL CHIP	10K	5%	1/16W
R206	1-216-807-11	METAL CHIP	68	5%	1/16W
R207	1-216-821-11	METAL CHIP	1K	5%	1/16W
R208	1-216-821-11	METAL CHIP	1K	5%	1/16W
R216	1-216-864-11	METAL CHIP	0		
R228	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R229	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R230	1-216-805-11	METAL CHIP	47	5%	1/16W
R231	1-216-805-11	METAL CHIP	47	5%	1/16W
R232	1-216-818-11	METAL CHIP	560	5%	1/16W
R233	1-216-814-11	METAL CHIP	270	5%	1/16W
R234	1-216-813-11	METAL CHIP	220	5%	1/16W
R235	1-216-837-11	METAL CHIP	22K	5%	1/16W
R236	1-216-839-11	METAL CHIP	33K	5%	1/16W
R237	1-216-821-11	METAL CHIP	1K	5%	1/16W
R238	1-216-811-11	METAL CHIP	150	5%	1/16W
R239	1-216-833-11	METAL CHIP	10K	5%	1/16W
R240	1-216-833-11	METAL CHIP	10K	5%	1/16W
R243	1-216-841-11	METAL CHIP	47K	5%	1/16W
R244	1-216-833-11	METAL CHIP	10K	5%	1/16W
R245	1-216-833-11	METAL CHIP	10K	5%	1/16W
R246	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R247	1-216-815-11	METAL CHIP	330	5%	1/16W
R248	1-216-812-11	METAL CHIP	180	5%	1/16W
R253	1-216-864-11	METAL CHIP	0		
R256	1-216-837-11	METAL CHIP	22K	5%	1/16W
R257	1-216-837-11	METAL CHIP	22K	5%	1/16W
R258	1-216-817-11	METAL CHIP	470	5%	1/16W
R259	1-216-817-11	METAL CHIP	470	5%	1/16W
R260	1-216-817-11	METAL CHIP	470	5%	1/16W
R261	1-216-815-11	METAL CHIP	330	5%	1/16W
R262	1-216-818-11	METAL CHIP	560	5%	1/16W
R264	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R267	1-216-841-11	METAL CHIP	47K	5%	1/16W
R268	1-216-841-11	METAL CHIP	47K	5%	1/16W
R269	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R270	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R271	1-216-833-11	METAL CHIP	10K	5%	1/16W
R281	1-216-864-11	METAL CHIP	0		
R285	1-216-837-11	METAL CHIP	22K	5%	1/16W
R286	1-216-837-11	METAL CHIP	22K	5%	1/16W
R287	1-216-817-11	METAL CHIP	470	5%	1/16W
R288	1-216-817-11	METAL CHIP	470	5%	1/16W
R291	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R292	1-216-821-11	METAL CHIP	1K	5%	1/16W
R293	1-216-818-11	METAL CHIP	560	5%	1/16W
R294	1-216-817-11	METAL CHIP	470	5%	1/16W
R295	1-216-833-11	METAL CHIP	10K	5%	1/16W
R300	1-216-817-11	METAL CHIP	470	5%	1/16W
R301	1-216-817-11	METAL CHIP	470	5%	1/16W
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R305	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R308	1-216-821-11	METAL CHIP	1K	5%	1/16W
R309	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-821-11	METAL CHIP	1K	5%	1/16W
R313	1-216-821-11	METAL CHIP	1K	5%	1/16W
R314	1-216-821-11	METAL CHIP	1K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R317	1-216-814-11	METAL CHIP	270	5%	1/16W
R318	1-216-837-11	METAL CHIP	22K	5%	1/16W
R319	1-216-837-11	METAL CHIP	22K	5%	1/16W
R320	1-216-817-11	METAL CHIP	470	5%	1/16W
R321	1-216-817-11	METAL CHIP	470	5%	1/16W
R322	1-216-864-11	METAL CHIP	0		
R323	1-216-817-11	METAL CHIP	470	5%	1/16W
R324	1-216-819-11	METAL CHIP	680	5%	1/16W
R325	1-216-813-11	METAL CHIP	220	5%	1/16W
R326	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R327	1-216-837-11	METAL CHIP	22K	5%	1/16W
R328	1-216-838-11	METAL CHIP	27K	5%	1/16W
R329	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R330	1-216-833-11	METAL CHIP	10K	5%	1/16W
R331	1-216-817-11	METAL CHIP	470	5%	1/16W
R332	1-216-821-11	METAL CHIP	1K	5%	1/16W
R333	1-216-821-11	METAL CHIP	1K	5%	1/16W
R334	1-216-820-11	METAL CHIP	820	5%	1/16W
R335	1-216-817-11	METAL CHIP	470	5%	1/16W
R336	1-216-821-11	METAL CHIP	1K	5%	1/16W
R337	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R338	1-216-817-11	METAL CHIP	470	5%	1/16W
R339	1-216-836-11	METAL CHIP	18K	5%	1/16W
R340	1-216-833-11	METAL CHIP	10K	5%	1/16W
R344	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R346	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R347	1-216-845-11	METAL CHIP	100K	5%	1/16W
R348	1-216-845-11	METAL CHIP	100K	5%	1/16W
R349	1-216-833-11	METAL CHIP	10K	5%	1/16W
R350	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W
R351	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R352	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R353	1-216-817-11	METAL CHIP	470	5%	1/16W
R354	1-216-833-11	METAL CHIP	10K	5%	1/16W
R355	1-216-855-11	METAL CHIP	680K	5%	1/16W
R356	1-216-857-11	METAL CHIP	1M	5%	1/16W
R358	1-216-847-11	METAL CHIP	150K	5%	1/16W
R359	1-216-843-11	METAL CHIP	68K	5%	1/16W
R360	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R361	1-216-845-11	METAL CHIP	100K	5%	1/16W
R362	1-216-845-11	METAL CHIP	100K	5%	1/16W
R363	1-216-845-11	METAL CHIP	100K	5%	1/16W
R364	1-216-845-11	METAL CHIP	100K	5%	1/16W
R365	1-216-841-11	METAL CHIP	47K	5%	1/16W
R366	1-216-833-11	METAL CHIP	10K	5%	1/16W
R367	1-216-836-11	METAL CHIP	18K	5%	1/16W
R368	1-216-837-11	METAL CHIP	22K	5%	1/16W
R369	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R370	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R371	1-216-817-11	METAL CHIP	470	5%	1/16W
R372	1-216-809-11	METAL CHIP	100	5%	1/16W
R373	1-216-838-11	METAL CHIP	27K	5%	1/16W
R374	1-216-845-11	METAL CHIP	100K	5%	1/16W
R375	1-216-839-11	METAL CHIP	33K	5%	1/16W
R376	1-216-833-11	METAL CHIP	10K	5%	1/16W
R377	1-216-821-11	METAL CHIP	1K	5%	1/16W
R378	1-216-817-11	METAL CHIP	470	5%	1/16W
R379	1-216-809-11	METAL CHIP	100	5%	1/16W
R380	1-216-849-11	METAL CHIP	220K	5%	1/16W
R381	1-216-864-11	METAL CHIP	0		
R382	1-216-834-11	METAL CHIP	12K	5%	1/16W
R383	1-216-838-11	METAL CHIP	27K	5%	1/16W
R384	1-216-850-11	METAL CHIP	270K	5%	1/16W
R385	1-216-838-11	METAL CHIP	27K	5%	1/16W
R386	1-216-833-11	METAL CHIP	10K	5%	1/16W
R387	1-216-814-11	METAL CHIP	270	5%	1/16W
R390	1-216-821-11	METAL CHIP	1K	5%	1/16W
R391	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R392	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R393	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R394	1-216-841-11	METAL CHIP	47K	5%	1/16W
R395	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R396	1-216-809-11	METAL CHIP	100	5%	1/16W
R400	1-216-817-11	METAL CHIP	470	5%	1/16W
R401	1-216-819-11	METAL CHIP	680	5%	1/16W

For Service Manuals Contact
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Ref. No.	Part No.	Description	Remark
R501	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R502	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R503	1-216-818-11	METAL CHIP 560 5% 1/16W	
R504	1-216-816-11	METAL CHIP 390 5% 1/16W	
R506	1-216-817-11	METAL CHIP 470 5% 1/16W	
R515	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R516	1-216-820-11	METAL CHIP 820 5% 1/16W	
R517	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R518	1-216-810-11	METAL CHIP 120 5% 1/16W	
R521	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R522	1-216-818-11	METAL CHIP 560 5% 1/16W	
R523	1-216-817-11	METAL CHIP 470 5% 1/16W	
R524	1-216-817-11	METAL CHIP 470 5% 1/16W	
R525	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R526	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R527	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R528	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R529	1-216-839-11	METAL CHIP 33K 5% 1/16W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV201	1-230-870-11	RES, ADJ METAL 10K	
RV202	1-230-869-11	RES, ADJ METAL 4.7K	
RV203	1-230-869-11	RES, ADJ METAL 4.7K	
RV205	1-238-089-11	RES, ADJ CERMET 4.7K	
RV206	1-238-088-11	RES, ADJ CERMET 2.2K	
RV207	1-238-087-11	RES, ADJ CERMET 1K	

< TERMINAL PIN >

Ref. No.	Part No.	Description	Remark
TP001	* 1-535-622-11	PIN, TERMINAL	

< FLEXIBLE BOARD >

Ref. No.	Part No.	Description	Remark
W001	1-634-428-11	FP-257 FLEXIBLE BOARD	
W002	1-634-426-11	FP-255 FLEXIBLE BOARD	
W201	1-634-427-11	FP-256 FLEXIBLE BOARD	

< CRYSTAL >

Ref. No.	Part No.	Description	Remark
X001	1-577-467-21	VIBRATOR, CRYSTAL (16MHz)	
X150	1-567-700-21	VIBRATOR, CRYSTAL (5.9MHz)	

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* A-7071-393-A SW-168 BOARD, COMPLETE

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(Ref.No 6,000 Series)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN701	* 1-566-764-11	PIN, CONNECTOR (PC BOARD) 9P	
CN702	* 1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	
CN703	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D701	8-719-977-34	DIODE DTZ12	
D702	8-719-977-34	DIODE DTZ12	
D705	8-719-977-34	DIODE DTZ12	

< JACK >

Ref. No.	Part No.	Description	Remark
J701	1-507-929-11	JACK	
J702	1-565-276-21	JACK, ULTRA SMALL 1P	

< COIL >

Ref. No.	Part No.	Description	Remark
L701	1-410-369-11	INDUCTOR CHIP 1uH	
L702	1-410-369-11	INDUCTOR CHIP 1uH	
L703	1-410-369-11	INDUCTOR CHIP 1uH	
L704	1-410-369-11	INDUCTOR CHIP 1uH	
L705	1-410-369-11	INDUCTOR CHIP 1uH	
L706	1-410-369-11	INDUCTOR CHIP 1uH	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S701	1-570-870-11	SWITCH, SLIDE (STANDBY)	
S702	1-571-838-11	SWITCH, TACTIL (REC START/STOP)	

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* A-7062-703-A VA-64 BOARD, COMPLETE

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(Ref.No 3,000 Series)

Ref. No.	Part No.	Description	Remark
	3-744-791-01	CASE, SHIELD, VA	
	* 3-744-792-01	LID, REAR, VA SHIELD	
	* 3-744-799-01	CASE, SHIELD, FL	
	7-627-553-48	PRECISION SCREW +P 2X4 TYPE 3	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C415	1-128-003-11	ELECT CHIP 22uF 20% 4V	
C416	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C417	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C418	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C424	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C425	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C426	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C427	1-128-004-11	ELECT CHIP 10uF 20% 16V	

Ref. No.	Part No.	Description			Remark
C428	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C430	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C436	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C437	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C439	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C448	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C449	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C453	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C456	1-162-932-11	CERAMIC CHIP	2PF	0.25PF	50V
C461	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C462	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C464	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C465	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C466	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C467	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C471	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C650	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C651	1-128-004-11	ELECT CHIP	10uF	20%	16V
C652	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C653	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C654	1-124-779-00	ELECT CHIP	10uF	20%	16v
C655	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C656	1-135-145-11	TANTALUM CHIP	0.47uF	10%	25V
C657	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C658	1-128-004-11	ELECT CHIP	10uF	20%	16V
C659	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C660	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C661	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C662	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C663	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C664	1-128-004-11	ELECT CHIP	10uF	20%	16V
C665	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C666	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C667	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C668	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C669	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C670	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C671	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C672	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C673	1-128-004-11	ELECT CHIP	10uF	20%	16V
C674	1-126-207-11	ELECT CHIP	33uF	20%	4V
C675	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C676	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C677	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C678	1-126-425-11	ELECT	10uF	20%	10V
C680	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C683	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C684	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C685	1-162-974-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C686	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C687	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C688	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C689	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C690	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C691	1-126-154-11	ELECT	47uF	20%	6.3V
C692	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C695	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C696	1-135-091-00	TANTAL. CHIP	1uF	20%	16V
C697	1-135-091-00	TANTAL. CHIP	1uF	20%	16V
C698	1-135-176-21	TANTALUM CHIP	0.68uF	10%	20V
C699	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C700	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C701	1-128-004-11	ELECT CHIP	10uF	20%	16V
C702	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C703	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C705	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C706	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C707	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C708	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C709	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C710	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C711	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C712	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C713	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C714	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C715	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C716	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C717	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C718	1-136-015-00	CERAMIC CHIP	0.0033uF		50V
C736	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C737	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V
C739	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V
C740	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V
C741	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V
C742	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C743	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C745	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C747	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C748	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C749	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C750	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C751	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C752	1-126-163-11	ELECT	4.7uF	20%	50V
C753	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C754	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C755	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C756	1-163-035-00	CERAMIC CHIP	0.047uF		50V

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Ref. No.	Part No.	Description			Remark
C757	1-162-932-11	CERAMIC CHIP	2PF	0.25PF	50V
C758	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V
C759	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C760	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C761	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C763	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C764	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C765	1-128-004-11	ELECT CHIP	10uF	20%	16V
C766	1-126-245-11	ELECT	330uF	20%	6.3V
C767	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C768	1-126-607-11	ELECT CHIP	47uF	20%	4V
C769	1-128-004-11	ELECT CHIP	10uF	20%	16V
C771	1-128-003-11	ELECT CHIP	22uF	20%	4V
C772	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C774	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C775	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C776	1-126-155-11	ELECT	100uF	20%	6.3V
C777	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C778	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C781	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C782	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C783	1-128-003-11	ELECT CHIP	22uF	20%	4V
C784	1-126-425-11	ELECT	10uF	20%	10V
C785	1-126-607-11	ELECT CHIP	47uF	20%	4V
C786	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C787	1-128-004-11	ELECT CHIP	10uF	20%	16V
C788	1-128-004-11	ELECT CHIP	10uF	20%	16V
C789	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C790	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V
C794	1-164-634-11	CERAMIC CHIP	1uF		16V
C796	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C797	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C798	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C799	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C800	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C802	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C803	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C804	1-128-004-11	ELECT CHIP	10uF	20%	16V
C805	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C806	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C808	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C809	1-164-634-11	CERAMIC CHIP	1uF		16V
C811	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C812	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C813	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C814	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C815	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C816	1-128-004-11	ELECT CHIP	10uF	20%	16V
C817	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C818	1-128-008-11	ELECT CHIP	3.3uF	20%	35V
C819	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C821	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C824	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C826	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C827	1-128-004-11	ELECT CHIP	10uF	20%	16V
C828	1-128-004-11	ELECT CHIP	10uF	20%	16V
C829	1-128-004-11	ELECT CHIP	10uF	20%	16V
C831	1-126-425-11	ELECT	10uF	20%	10V
C832	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C833	1-128-004-11	ELECT CHIP	10uF	20%	16V
C836	1-128-004-11	ELECT CHIP	10uF	20%	16V
C837	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C838	1-126-245-11	ELECT	330uF	20%	6.3V
C839	1-126-607-11	ELECT CHIP	47uF	20%	4V
C840	1-128-004-11	ELECT CHIP	10uF	20%	16V
C841	1-128-004-11	ELECT CHIP	10uF	20%	16V
C842	1-128-004-11	ELECT CHIP	10uF	20%	16V
C843	1-126-607-11	ELECT CHIP	47uF	20%	4V
C844	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C845	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C848	1-128-004-11	ELECT CHIP	10uF	20%	16V
C851	1-164-362-11	CERAMIC CHIP	470PF		50V
C854	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C856	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C857	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C858	1-126-245-11	ELECT	330uF	20%	6.3V
C859	1-128-004-11	ELECT CHIP	10uF	20%	16V
C860	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C861	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C862	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C863	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C864	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C865	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C869	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C870	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C871	1-128-004-11	ELECT CHIP	10uF	20%	16V
C872	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C873	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C874	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C875	1-128-003-11	ELECT CHIP	22uF	20%	4V
C876	1-128-004-11	ELECT CHIP	10uF	20%	16V
C878	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C880	1-128-003-11	ELECT CHIP	22uF	20%	4V
C881	1-162-974-11	CERAMIC CHIP	0.01uF		50V

< FILTER >

CF650	1-567-727-11	FILTER, CERAMIC

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN551	1-568-801-11	CONNECTOR. FPC (ZIF) 24P	
CN650	1-580-057-11	PIN. CONNECTOR 4P	
		< DIODE >	
D415	8-719-421-30	DIODE MA141A	
D416	8-719-800-76	DIODE 1SS226	
D417	8-719-941-86	DIODE DAN202U	
D419	8-719-941-09	DIODE DAP202U	
D420	8-719-941-86	DIODE DAN202U	
D422	8-719-941-86	DIODE DAN202U	
D423	8-719-941-86	DIODE DAN202U	
D427	8-719-941-86	DIODE DAN202U	
D428	8-719-941-86	DIODE DAN202U	
D435	8-719-941-86	DIODE DAN202U	
D651	8-719-941-86	DIODE DAN202U	
D652	8-719-977-22	DIODE DTZ9. 1	
D654	8-719-977-22	DIODE DTZ9. 1	
D655	8-719-800-76	DIODE 1SS226	
D656	8-719-941-86	DIODE DAN202U	
D657	8-719-800-76	DIODE 1SS226	
D661	8-719-941-86	DIODE DAN202U	
D662	8-719-951-22	DIODE IMN10	
D663	8-719-941-86	DIODE DAN202U	
D667	8-719-941-89	DIODE DA106U	
D669	8-719-977-22	DIODE DTZ9. 1	
D670	8-719-977-22	DIODE DTZ9. 1	
D671	8-719-977-22	DIODE DTZ9. 1	
D672	8-719-977-22	DIODE DTZ9. 1	
D674	8-719-977-22	DIODE DTZ9. 1	
D675	8-719-977-22	DIODE DTZ9. 1	
D676	8-719-977-22	DIODE DTZ9. 1	
D677	8-719-977-22	DIODE DTZ9. 1	
D678	8-719-977-22	DIODE DTZ9. 1	
D679	8-719-977-22	DIODE DTZ9. 1	
D680	8-719-977-22	DIODE DTZ9. 1	
D681	8-719-977-22	DIODE DTZ9. 1	
D690	8-719-941-86	DIODE DAN202U	
		< FILTER >	
FL650	1-236-146-11	FILTER. BAND PASS	
FL651	1-236-575-11	B. P. F (PAL-M)	
FL653	1-415-818-11	DELAY LINE. LC (Y)	
FL655	1-236-757-21	FILTER. LOW PASS (C)	
FL656	1-236-773-21	FILTER. LOW PASS (Y)	
FL657	1-236-775-11	FILTER. LOW PASS (DEM)	
FL658	1-236-774-11	FILTER. LOW PASS (Y)	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC416	8-759-710-09	IC NJM2233AM	
IC650	8-752-036-19	IC CXA1207R	
IC651	8-752-036-20	IC CXA1208R	
IC653	8-759-925-60	IC BA401	
IC654	8-752-009-51	IC CX20095A	
IC656	8-759-320-76	IC HA118070FP	
IC657	8-752-332-68	IC CXL5502M	
IC658	8-752-332-68	IC CXL5502M	
IC659	8-759-710-29	IC NJM2235M	
IC660	8-759-710-07	IC NJM2234M	
IC661	8-759-710-07	IC NJM2234M	
IC662	8-759-009-22	IC MC14094BF	
IC663	8-759-710-29	IC NJM2235M	
		< JACK >	
J650	1-566-850-31	CONNECTOR. (S) TERMINAL 4P (S VIDEO)	
J651	1-569-556-11	JACK (VIDEO/AUDIO/RFU DC OUT)	
		< COIL >	
L443	1-412-058-11	INDUCTOR. CHIP 10uH	
L444	1-410-379-21	INDUCTOR CHIP 6. 8uH	
L445	1-410-385-11	INDUCTOR CHIP 22uH	
L650	1-410-389-31	INDUCTOR CHIP 47uH	
L651	1-410-378-11	INDUCTOR CHIP 5. 6uH	
L653	1-410-385-11	INDUCTOR CHIP 22uH	
L654	1-408-788-21	INDUCTOR CHIP 82uH	
L657	1-410-385-11	INDUCTOR CHIP 22uH	
L658	1-410-393-11	INDUCTOR CHIP 100uH	
L659	1-410-655-31	INDUCTOR CHIP 120uH	
L660	1-410-393-11	INDUCTOR CHIP 100uH	
L661	1-410-656-11	INDUCTOR CHIP 150uH	
L662	1-410-393-11	INDUCTOR CHIP 100uH	
L663	1-410-381-11	INDUCTOR CHIP 10uH	
L666	1-410-384-31	INDUCTOR CHIP 18uH	
L667	1-408-797-11	INDUCTOR CHIP 470uH	
L668	1-408-797-11	INDUCTOR CHIP 470uH	
L669	1-410-384-31	INDUCTOR CHIP 18uH	
L670	1-410-389-31	INDUCTOR CHIP 47uH	
L671	1-410-389-31	INDUCTOR CHIP 47uH	
L673	1-410-385-11	INDUCTOR CHIP 22uH	
L674	1-410-385-11	INDUCTOR CHIP 22uH	
L676	1-410-380-31	INDUCTOR CHIP 8. 2uH	
L678	1-410-391-11	INDUCTOR CHIP 68uH	
L679	1-410-386-11	INDUCTOR CHIP 27uH	
L681	1-412-058-11	INDUCTOR CHIP 10uH	
L682	1-410-389-31	INDUCTOR CHIP 47uH	
L683	1-412-058-11	INDUCTOR CHIP 10uH	

For Service Manuals Contact
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Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description	Remark
L684	1-410-389-31	INDUCTOR CHIP 47uH	
L685	1-410-389-31	INDUCTOR CHIP 47uH	
L688	1-410-378-11	INDUCTOR CHIP 5.6uH	
L689	1-410-389-31	INDUCTOR CHIP 47uH	
L690	1-216-296-00	METAL CHIP 0 5% 1/8W	
L691	1-410-389-31	INDUCTOR CHIP 47uH	
L692	1-410-655-31	INDUCTOR CHIP 120uH	
L699	1-410-385-11	INDUCTOR CHIP 22uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q411	8-729-905-23	TRANSISTOR 2SA1576-R	
Q414	8-729-905-35	TRANSISTOR 2SC4081-R	
Q415	8-729-905-23	TRANSISTOR 2SA1576-R	
Q416	8-729-905-35	TRANSISTOR 2SC4081-R	
Q417	8-729-905-12	TRANSISTOR DTA144EU	
Q418	8-729-905-35	TRANSISTOR 2SC4081-R	
Q421	8-729-905-23	TRANSISTOR 2SA1576-R	
Q422	8-729-905-18	TRANSISTOR DTC144EU	
Q426	8-729-905-35	TRANSISTOR 2SC4081-R	
Q427	8-729-905-35	TRANSISTOR 2SC4081-R	
Q433	8-729-905-35	TRANSISTOR 2SC4081-R	
Q434	8-729-905-23	TRANSISTOR 2SA1576-R	
Q444	8-729-905-35	TRANSISTOR 2SC4081-R	
Q446	8-729-905-35	TRANSISTOR 2SC4081-R	
Q447	8-729-921-58	TRANSISTOR DTA144TU	
Q452	8-729-905-18	TRANSISTOR DTC144EU	
Q456	8-729-905-18	TRANSISTOR DTC144EU	
Q491	8-729-905-12	TRANSISTOR DTA144EU	
Q493	8-729-905-12	TRANSISTOR DTA144EU	
Q494	8-729-905-35	TRANSISTOR 2SC4081-R	
Q498	8-729-905-18	TRANSISTOR DTC144EU	
Q642	8-729-921-58	TRANSISTOR DTA144TU	
Q643	8-729-905-23	TRANSISTOR 2SA1576-R	
Q645	8-729-905-18	TRANSISTOR DTC144EU	
Q651	8-729-905-23	TRANSISTOR 2SA1576-R	
Q653	8-729-824-05	TRANSISTOR 3SK248	
Q654	8-729-824-05	TRANSISTOR 3SK248	
Q655	8-729-905-12	TRANSISTOR DTA144EU	
Q656	8-729-905-23	TRANSISTOR 2SA1576-R	
Q657	8-729-905-35	TRANSISTOR 2SC4081-R	
Q658	8-729-924-36	TRANSISTOR DTC143EU	
Q659	8-729-905-35	TRANSISTOR 2SC4081-R	
Q660	8-729-117-72	TRANSISTOR 2SC4178	
Q661	8-729-905-35	TRANSISTOR 2SC4081-R	
Q662	8-729-117-72	TRANSISTOR 2SC4178	
Q663	8-729-905-23	TRANSISTOR 2SA1576-R	
Q665	8-729-905-35	TRANSISTOR 2SC4081-R	
Q666	8-729-905-35	TRANSISTOR 2SC4081-R	

Ref. No.	Part No.	Description	Remark
Q667	8-729-905-18	TRANSISTOR DTC144EU	
Q669	8-729-905-18	TRANSISTOR DTC144EU	
Q670	8-729-202-38	TRANSISTOR 2SC3326N	
Q671	8-729-905-18	TRANSISTOR DTC144EU	
Q672	8-729-905-18	TRANSISTOR DTC144EU	
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q675	8-729-905-18	TRANSISTOR DTC144EU	
Q676	8-729-905-12	TRANSISTOR DTA144EU	
Q677	8-729-905-12	TRANSISTOR DTA144EU	
Q678	8-729-202-38	TRANSISTOR 2SC3326N	
Q679	8-729-202-38	TRANSISTOR 2SC3326N	
Q681	8-729-905-35	TRANSISTOR 2SC4081-R	
Q682	8-729-905-35	TRANSISTOR 2SC4081-R	
Q683	8-729-905-23	TRANSISTOR 2SA1576-R	
Q686	8-729-905-35	TRANSISTOR 2SC4081-R	
Q687	8-729-905-35	TRANSISTOR 2SC4081-R	
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q691	8-729-905-18	TRANSISTOR DTC144EU	
Q692	8-729-905-18	TRANSISTOR DTC144EU	
Q693	8-729-202-38	TRANSISTOR 2SC3326N	
Q694	8-729-202-38	TRANSISTOR 2SC3326N	
Q698	8-729-905-35	TRANSISTOR 2SC4081-R	
Q699	8-729-905-12	TRANSISTOR DTA144EU	
Q700	8-729-202-38	TRANSISTOR 2SC3326N	
Q701	8-729-905-35	TRANSISTOR 2SC4081-R	
Q702	8-729-905-35	TRANSISTOR 2SC4081-R	
Q703	8-729-905-23	TRANSISTOR 2SA1576-R	
Q705	8-729-905-12	TRANSISTOR DTA144EU	
Q707	8-729-904-20	TRANSISTOR FMA2	
Q708	8-729-904-07	TRANSISTOR FMG2	
Q711	8-729-905-12	TRANSISTOR DTA144EU	
Q712	8-729-905-12	TRANSISTOR DTA144EU	
Q717	8-729-905-23	TRANSISTOR 2SA1576-R	
Q719	8-729-905-18	TRANSISTOR DTC144EU	
Q721	8-729-202-38	TRANSISTOR 2SC3326N	
Q722	8-729-905-35	TRANSISTOR 2SC4081-R	
Q724	8-729-905-23	TRANSISTOR 2SA1576-R	
Q727	8-729-905-45	TRANSISTOR DTA143EU	
Q728	8-729-905-23	TRANSISTOR 2SA1576-R	
Q729	8-729-905-35	TRANSISTOR 2SC4081-R	
Q730	8-729-905-23	TRANSISTOR 2SA1576-R	
Q731	8-729-905-12	TRANSISTOR DTA144EU	
Q732	8-729-905-35	TRANSISTOR 2SC4081-R	
Q737	8-729-905-12	TRANSISTOR DTA144EU	
Q742	8-729-905-23	TRANSISTOR 2SA1576-R	
Q743	8-729-905-35	TRANSISTOR 2SC4081-R	
Q744	8-729-905-35	TRANSISTOR 2SC4081-R	
Q745	8-729-905-18	TRANSISTOR DTC144EU	
Q746	8-729-141-48	TRANSISTOR 2SB624-BV345	

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Ref. No.	Part No.	Description				Remark
Q747	8-729-905-23	TRANSISTOR	2SA1576-R			
Q748	8-729-905-35	TRANSISTOR	2SC4081-R			
Q751	8-729-905-35	TRANSISTOR	2SC4081-R			
Q752	8-729-905-23	TRANSISTOR	2SA1576-R			
Q753	8-729-904-20	TRANSISTOR	FMA2			
Q756	8-729-905-23	TRANSISTOR	2SA1576-R			
Q757	8-729-905-35	TRANSISTOR	2SC4081-R			
Q758	8-729-905-35	TRANSISTOR	2SC4081-R			
Q760	8-729-905-12	TRANSISTOR	DTA144EU			
Q761	8-729-905-18	TRANSISTOR	DTC144EU			
Q762	8-729-905-18	TRANSISTOR	DTC144EU			
Q763	8-729-905-18	TRANSISTOR	DTC144EU			
Q764	8-729-905-35	TRANSISTOR	2SC4081-R			
Q765	8-729-905-35	TRANSISTOR	2SC4081-R			
Q766	8-729-905-23	TRANSISTOR	2SA1576-R			
Q767	8-729-824-05	TRANSISTOR	3SK248			
Q770	8-729-101-07	TRANSISTOR	2SB798-DLDK			
Q771	8-729-905-35	TRANSISTOR	2SC4081-R			
Q772	8-729-905-12	TRANSISTOR	DTA144EU			
Q773	8-729-905-12	TRANSISTOR	DTA144EU			
Q774	8-729-905-35	TRANSISTOR	2SC4081-R			
Q775	8-729-905-18	TRANSISTOR	DTC144EU			
Q776	8-729-921-58	TRANSISTOR	DTA144TU			
Q777	8-729-905-23	TRANSISTOR	2SA1576-R			
Q786	8-729-905-18	TRANSISTOR	DTC144EU			
		< RESISTOR >				
R411	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R412	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R414	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R415	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R416	1-216-813-11	METAL CHIP	220	5%	1/16W	
R417	1-216-816-11	METAL CHIP	390	5%	1/16W	
R418	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R420	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R421	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R422	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R423	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R424	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R425	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R426	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R427	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R428	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R429	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R430	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R431	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R432	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R433	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R445	1-216-864-11	METAL CHIP	0			
R446	1-216-864-11	METAL CHIP	0			
R447	1-216-864-11	METAL CHIP	0			
R448	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R449	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R451	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R456	1-216-856-11	METAL CHIP	820K	5%	1/16W	
R457	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R458	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R459	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R460	1-216-864-11	METAL CHIP	0			
R462	1-216-864-11	METAL CHIP	0			
R463	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R464	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R465	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R466	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R467	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R468	1-216-864-11	METAL CHIP	0			
R469	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R471	1-216-864-11	METAL CHIP	0			
R472	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R475	1-216-864-11	METAL CHIP	0			
R484	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R486	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R488	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R489	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R491	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R496	1-216-296-00	METAL CHIP	0	5%	1/8W	
R498	1-216-815-11	METAL CHIP	330	5%	1/16W	
R630	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R632	1-216-816-11	METAL CHIP	390	5%	1/16W	
R634	1-216-864-11	METAL CHIP	0			
R636	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R638	1-216-807-11	METAL CHIP	68	5%	1/16W	
R641	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R643	1-216-864-11	METAL CHIP	0			
R644	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R645	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R646	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R647	1-216-815-11	METAL CHIP	330	5%	1/16W	
R648	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R650	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R651	1-216-814-11	METAL CHIP	270	5%	1/16W	
R652	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R654	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R655	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R657	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R658	1-216-841-11	METAL CHIP	47K	5%	1/16W	

For Service Manuals Contact
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Ref. No.	Part No.	Description			Remark
R659	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R660	1-216-816-11	METAL CHIP	390	5%	1/16W
R661	1-216-833-11	METAL CHIP	10K	5%	1/16W
R662	1-216-833-11	METAL CHIP	10K	5%	1/16W
R663	1-216-857-11	METAL CHIP	1M	5%	1/16W
R664	1-216-845-11	METAL CHIP	100K	5%	1/16W
R665	1-216-853-11	METAL CHIP	470K	5%	1/16W
R667	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R668	1-216-845-11	METAL CHIP	100K	5%	1/16W
R669	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R670	1-216-821-11	METAL CHIP	1K	5%	1/16W
R671	1-216-821-11	METAL CHIP	1K	5%	1/16W
R672	1-216-833-11	METAL CHIP	10K	5%	1/16W
R673	1-216-833-11	METAL CHIP	10K	5%	1/16W
R674	1-216-833-11	METAL CHIP	10K	5%	1/16W
R675	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R676	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R677	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R678	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R679	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R680	1-216-833-11	METAL CHIP	10K	5%	1/16W
R681	1-216-864-11	METAL CHIP	0		
R682	1-216-818-11	METAL CHIP	560	5%	1/16W
R683	1-216-817-11	METAL CHIP	470	5%	1/16W
R684	1-216-821-11	METAL CHIP	1K	5%	1/16W
R685	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R686	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R687	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R688	1-216-817-11	METAL CHIP	470	5%	1/16W
R689	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R690	1-216-816-11	METAL CHIP	390	5%	1/16W
R691	1-216-864-11	METAL CHIP	0		
R692	1-216-833-11	METAL CHIP	10K	5%	1/16W
R693	1-216-813-11	METAL CHIP	220	5%	1/16W
R695	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R696	1-216-812-11	METAL CHIP	180	5%	1/16W
R697	1-216-812-11	METAL CHIP	180	5%	1/16W
R698	1-216-813-11	METAL CHIP	220	5%	1/16W
R701	1-216-833-11	METAL CHIP	10K	5%	1/16W
R703	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R704	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R709	1-216-841-11	METAL CHIP	47K	5%	1/16W
R710	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R711	1-216-836-11	METAL CHIP	18K	5%	1/16W
R712	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R713	1-216-797-11	METAL CHIP	10	5%	1/16W
R714	1-216-841-11	METAL CHIP	47K	5%	1/16W
R715	1-216-841-11	METAL CHIP	47K	5%	1/16W
R716	1-216-039-00	METAL CHIP	390	5%	1/10W
R718	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R719	1-216-841-11	METAL CHIP	47K	5%	1/16W
R720	1-216-841-11	METAL CHIP	47K	5%	1/16W
R721	1-216-041-00	METAL CHIP	470	5%	1/10W
R723	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R724	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R725	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R726	1-216-817-11	METAL CHIP	470	5%	1/16W
R728	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R729	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R730	1-216-821-11	METAL CHIP	1K	5%	1/16W
R731	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R735	1-216-837-11	METAL CHIP	22K	5%	1/16W
R736	1-216-864-11	METAL CHIP	0		
R738	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R739	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R741	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R742	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R743	1-216-821-11	METAL CHIP	1K	5%	1/16W
R744	1-216-821-11	METAL CHIP	1K	5%	1/16W
R746	1-216-864-11	METAL CHIP	0		
R748	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R749	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R750	1-216-818-11	METAL CHIP	560	5%	1/16W
R751	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R766	1-216-821-11	METAL CHIP	1K	5%	1/16W
R767	1-216-821-11	METAL CHIP	1K	5%	1/16W
R774	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R775	1-216-841-11	METAL CHIP	47K	5%	1/16W
R776	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R777	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R778	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R779	1-216-839-11	METAL CHIP	33K	5%	1/16W
R780	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R781	1-216-815-11	METAL CHIP	330	5%	1/16W
R782	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R783	1-216-838-11	METAL CHIP	27K	5%	1/16W
R787	1-216-841-11	METAL CHIP	47K	5%	1/16W
R789	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R790	1-216-821-11	METAL CHIP	1K	5%	1/16W
R791	1-216-833-11	METAL CHIP	10K	5%	1/16W
R792	1-216-833-11	METAL CHIP	10K	5%	1/16W
R793	1-216-815-11	METAL CHIP	330	5%	1/16W
R794	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R795	1-216-810-11	METAL CHIP	120	5%	1/16W
R796	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R797	1-216-816-11	METAL CHIP	390	5%	1/16W
R799	1-216-835-11	METAL CHIP	15K	5%	1/16W
R801	1-216-817-11	METAL CHIP	470	5%	1/16W

Ref. No.	Part No.	Description			Remark
R802	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R803	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R804	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R806	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R807	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R808	1-216-818-11	METAL CHIP	560	5%	1/16W
R809	1-216-814-11	METAL CHIP	270	5%	1/16W
R810	1-216-820-11	METAL CHIP	820	5%	1/16W
R812	1-216-833-11	METAL CHIP	10K	5%	1/16W
R814	1-216-864-11	METAL CHIP	0		
R815	1-216-864-11	METAL CHIP	0		
R817	1-216-833-11	METAL CHIP	10K	5%	1/16W
R818	1-216-833-11	METAL CHIP	10K	5%	1/16W
R819	1-216-837-11	METAL CHIP	22K	5%	1/16W
R820	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R822	1-216-837-11	METAL CHIP	22K	5%	1/16W
R823	1-216-821-11	METAL CHIP	1K	5%	1/16W
R824	1-216-821-11	METAL CHIP	1K	5%	1/16W
R825	1-216-817-11	METAL CHIP	470	5%	1/16W
R826	1-216-819-11	METAL CHIP	680	5%	1/16W
R828	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R831	1-216-864-11	METAL CHIP	0		
R832	1-216-833-11	METAL CHIP	10K	5%	1/16W
R834	1-216-814-11	METAL CHIP	270	5%	1/16W
R835	1-216-814-11	METAL CHIP	270	5%	1/16W
R836	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R837	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R838	1-216-817-11	METAL CHIP	470	5%	1/16W
R839	1-216-817-11	METAL CHIP	470	5%	1/16W
R840	1-216-821-11	METAL CHIP	1K	5%	1/16W
R841	1-216-817-11	METAL CHIP	470	5%	1/16W
R846	1-216-833-11	METAL CHIP	10K	5%	1/16W
R847	1-216-837-11	METAL CHIP	22K	5%	1/16W
R848	1-216-821-11	METAL CHIP	1K	5%	1/16W
R849	1-216-815-11	METAL CHIP	330	5%	1/16W
R850	1-216-814-11	METAL CHIP	270	5%	1/16W
R851	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R852	1-216-821-11	METAL CHIP	1K	5%	1/16W
R854	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R856	1-216-833-11	METAL CHIP	10K	5%	1/16W
R858	1-216-864-11	METAL CHIP	0		
R859	1-216-814-11	METAL CHIP	270	5%	1/16W
R860	1-216-864-11	METAL CHIP	0		
R861	1-216-814-11	METAL CHIP	270	5%	1/16W
R862	1-216-834-11	METAL CHIP	12K	5%	1/16W
R863	1-216-834-11	METAL CHIP	12K	5%	1/16W
R865	1-216-816-11	METAL CHIP	390	5%	1/16W
R866	1-216-817-11	METAL CHIP	470	5%	1/16W
R869	1-216-857-11	METAL CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description			Remark
R870	1-216-821-11	METAL CHIP	1K	5%	1/16W
R872	1-216-844-11	METAL CHIP	82K	5%	1/16W
R875	1-216-839-11	METAL CHIP	33K	5%	1/16W
R876	1-216-842-11	METAL CHIP	56K	5%	1/16W
R877	1-216-817-11	METAL CHIP	470	5%	1/16W
R878	1-216-821-11	METAL CHIP	1K	5%	1/16W
R879	1-216-821-11	METAL CHIP	1K	5%	1/16W
R880	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R881	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R882	1-216-821-11	METAL CHIP	1K	5%	1/16W
R883	1-216-821-11	METAL CHIP	1K	5%	1/16W
R884	1-216-841-11	METAL CHIP	47K	5%	1/16W
R885	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R886	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R887	1-216-857-11	METAL CHIP	1M	5%	1/16W
R888	1-216-821-11	METAL CHIP	1K	5%	1/16W
R889	1-216-844-11	METAL CHIP	82K	5%	1/16W
R890	1-216-819-11	METAL CHIP	680	5%	1/16W
R891	1-216-818-11	METAL CHIP	560	5%	1/16W
R892	1-216-839-11	METAL CHIP	33K	5%	1/16W
R893	1-216-842-11	METAL CHIP	56K	5%	1/16W
R894	1-216-817-11	METAL CHIP	470	5%	1/16W
R895	1-216-821-11	METAL CHIP	1K	5%	1/16W
R896	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R897	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R898	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R899	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R900	1-216-833-11	METAL CHIP	10K	5%	1/16W
R901	1-216-804-11	METAL CHIP	39	5%	1/16W
R902	1-216-803-11	METAL CHIP	33	5%	1/16W
R903	1-216-864-11	METAL CHIP	0		
R908	1-216-804-11	METAL CHIP	39	5%	1/16W
R909	1-216-803-11	METAL CHIP	33	5%	1/16W
R910	1-216-864-11	METAL CHIP	0		
R912	1-216-864-11	METAL CHIP	0		
R917	1-216-833-11	METAL CHIP	10K	5%	1/16W
R919	1-216-821-11	METAL CHIP	1K	5%	1/16W
R920	1-216-821-11	METAL CHIP	1K	5%	1/16W
R923	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R924	1-216-821-11	METAL CHIP	1K	5%	1/16W
R925	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R926	1-216-821-11	METAL CHIP	1K	5%	1/16W
R928	1-216-821-11	METAL CHIP	1K	5%	1/16W
R933	1-216-864-11	METAL CHIP	0		
R935	1-216-864-11	METAL CHIP	0		
R938	1-216-864-11	METAL CHIP	0		
R940	1-216-864-11	METAL CHIP	0		
R941	1-216-864-11	METAL CHIP	0		
R943	1-216-821-11	METAL CHIP	1K	5%	1/16W

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Ref. No.	Part No.	Description			Remark
R945	1-216-848-11	METAL CHIP	180K	5%	1/16W
R946	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W
R947	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W
R948	1-216-814-11	METAL CHIP	270	5%	1/16W
R949	1-216-847-11	METAL CHIP	150K	5%	1/16W
R950	1-216-846-11	METAL CHIP	120K	5%	1/16W
R951	1-218-704-11	METAL CHIP	3.3K	0.50%	1/16W
R952	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W
R953	1-218-688-11	METAL CHIP	680	0.50%	1/16W
R954	1-216-844-11	METAL CHIP	82K	5%	1/16W
R955	1-216-837-11	METAL CHIP	22K	5%	1/16W
R956	1-216-835-11	METAL CHIP	15K	5%	1/16W
R957	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R958	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R959	1-216-817-11	METAL CHIP	470	5%	1/16W
R960	1-216-037-00	METAL CHIP	330	5%	1/10W
R961	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R962	1-216-803-11	METAL CHIP	33	5%	1/16W
R963	1-216-804-11	METAL CHIP	39	5%	1/16W
R965	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R969	1-216-138-00	METAL CHIP	3.3	5%	1/8W
R970	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R971	1-216-820-11	METAL CHIP	820	5%	1/16W
R972	1-216-836-11	METAL CHIP	18K	5%	1/16W
R973	1-216-833-11	METAL CHIP	10K	5%	1/16W
R974	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R976	1-216-833-11	METAL CHIP	10K	5%	1/16W
R977	1-216-841-11	METAL CHIP	47K	5%	1/16W
R978	1-216-818-11	METAL CHIP	560	5%	1/16W
R981	1-216-837-11	METAL CHIP	22K	5%	1/16W
R983	1-216-837-11	METAL CHIP	22K	5%	1/16W
R984	1-216-833-11	METAL CHIP	10K	5%	1/16W
R985	1-216-837-11	METAL CHIP	22K	5%	1/16W
R986	1-216-847-11	METAL CHIP	150K	5%	1/16W
R987	1-216-847-11	METAL CHIP	150K	5%	1/16W
R989	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R994	1-216-821-11	METAL CHIP	1K	5%	1/16W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	
RV416	1-238-092-11	RES, ADJ CERMET	47K
RV650	1-238-091-11	RES, ADJ CERMET	22K
RV651	1-238-092-11	RES, ADJ CERMET	47K
RV652	1-238-091-11	RES, ADJ CERMET	22K
RV653	1-238-089-11	RES, ADJ CERMET	4.7K
RV654	1-238-089-11	RES, ADJ CERMET	4.7K
RV655	1-238-086-11	RES, ADJ CERMET	470
RV656	1-238-091-11	RES, ADJ CERMET	22K
RV657	1-238-089-11	RES, ADJ CERMET	4.7K
RV661	1-238-089-11	RES, ADJ CERMET	4.7K
RV662	1-238-087-11	RES, ADJ CERMET	1K
RV663	1-238-087-11	RES, ADJ CERMET	1K
RV664	1-238-087-11	RES, ADJ CERMET	1K
RV666	1-238-087-11	RES, ADJ CERMET	1K

< SWITCH >

Ref. No.	Part No.	Description
SW650	1-553-977-00	SWITCH, SLIDE (IN/OUT)

< FLEXIBLE BOARD >

Ref. No.	Part No.	Description
W650	1-634-431-11	FP-260 FLEXIBLE BOARD

< CRYSTAL >

Ref. No.	Part No.	Description
X650	1-577-080-11	VIBRATOR, CRYSTAL (3.58MHz)

****

* A-7062-706-A VC-86 BOARD, COMPLETE

****

(Ref.No 1,000 Series)

A-7068-185-A MX-10 BOARD, COMPLETE (HIC)

* 3-744-763-01 CASE, SHIELD, VC

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C301	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C302	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C401	1-164-634-11	CERAMIC CHIP	1uF		16V
C402	1-164-634-11	CERAMIC CHIP	1uF		16V
C403	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C404	1-164-634-11	CERAMIC CHIP	1uF		16V
C406	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C407	1-164-634-11	CERAMIC CHIP	1uF		16V
C408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C409	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C410	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C411	1-124-566-11	ELECT	120uF	20%	6.3V
C412	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C414	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C415	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C416	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C417	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C419	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C420	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C501	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C502	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C506	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C507	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C508	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V

Ref. No.	Part No.	Description	Remark
C509	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C510	1-128-004-11	ELECT CHIP 10uF 20%	16V
C511	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V
C512	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V
C513	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V
C514	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C521	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C651	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C653	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C654	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C656	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C657	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C659	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V
C660	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C661	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C662	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C663	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C664	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C665	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C666	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C667	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C668	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C750	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C751	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN301	1-568-338-51	CONNECTOR, BOARD TO BOARD 24P	
CN302	1-568-331-11	CONNECTOR, BOARD TO BOARD 10P	
CN304	1-565-877-11	PIN, CONNECTOR (PC BOARD) 5P	
CN305	1-566-528-21	CONNECTOR, FPC (ZIF) 12P	
CN306	* 1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN307	* 1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P	
CN651	* 1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P	
CN652	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
CN653	1-565-877-11	PIN, CONNECTOR (PC BOARD) 5P	
CN654	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	
CN655	* 1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D501	8-719-404-46	DIODE MA110	
D502	8-719-404-46	DIODE MA110	
D503	8-719-404-46	DIODE MA110	
D504	8-719-404-46	DIODE MA110	
D651	8-719-976-90	DIODE DTZ4.3A	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL301	1-236-759-21	FILTER, LOW PASS (TRAP)	
FL302	1-415-731-21	DELAY LINE, LC (YH)	
FL303	1-415-819-11	DELAY LINE, LC	
FL401	1-415-763-21	DELAY LINE, LC	
FL402	1-415-730-21	DELAY LINE, LC (100NS)	

< IC >

Ref. No.	Part No.	Description	Remark
IC301	8-759-635-27	IC M62352GP	
IC401	8-752-038-XX	IC CXA1392R	
IC501	8-759-038-85	IC MC68HC11E9FU-SC400226	
IC504	8-759-635-27	IC M62352GP	
IC508	8-759-937-56	IC S-8054ALB-LM-S	
IC509	8-759-509-05	IC XRU4066BF	
IC510	8-759-998-96	IC LM324D	
IC651	8-759-981-82	IC RC3414M	
IC652	8-759-998-96	IC LM324D	
IC653	8-759-500-11	IC MM1036XF	
IC655	8-759-208-11	IC MC14053BF	
IC656	8-759-998-96	IC LM324D	

< COIL >

Ref. No.	Part No.	Description	Remark
L401	1-410-391-11	INDUCTOR CHIP 68uH	
L502	1-412-058-11	INDUCTOR CHIP 10uH	
L503	1-412-062-11	INDUCTOR CHIP 47uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q301	8-729-905-23	TRANSISTOR 2SA1576-R	
Q302	8-729-905-23	TRANSISTOR 2SA1576-R	
Q303	8-729-907-47	TRANSISTOR IMZ1T108	
Q402	8-729-907-47	TRANSISTOR IMZ1T108	
Q403	8-729-905-23	TRANSISTOR 2SA1576-R	
Q404	8-729-905-35	TRANSISTOR 2SC4081-R	
Q504	8-729-925-39	TRANSISTOR IMH8	
Q505	8-729-925-39	TRANSISTOR IMH8	
Q506	8-729-925-77	TRANSISTOR IMH6	
Q507	8-729-420-50	TRANSISTOR UN5215	
Q508	8-729-402-78	TRANSISTOR XN6401	
Q509	8-729-925-39	TRANSISTOR IMH8	
Q510	8-729-905-35	TRANSISTOR 2SC4081-R	
Q513	8-729-402-84	TRANSISTOR XN4601-TX	
Q513	8-729-907-47	TRANSISTOR IMZ1T108	
Q516	8-729-905-35	TRANSISTOR 2SC4081-R	
Q517	8-729-905-23	TRANSISTOR 2SA1576-R	
Q652	8-729-402-42	TRANSISTOR UN5213	
Q653	8-729-905-23	TRANSISTOR 2SA1576-R	
Q654	8-729-106-60	TRANSISTOR 2SB1115A	
Q655	8-729-905-35	TRANSISTOR 2SC4081-R	
Q656	8-729-821-88	TRANSISTOR 2SK1332-3	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R301	1-216-864-11	METAL CHIP 0	
R302	1-216-820-11	METAL CHIP 820 5% 1/16W	

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description			Remark
R304	1-216-821-11	METAL CHIP	1K	5%	1/16W
R307	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R310	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R311	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-836-11	METAL CHIP	18K	5%	1/16W
R313	1-216-837-11	METAL CHIP	22K	5%	1/16W
R314	1-216-864-11	METAL CHIP	0		
R316	1-216-839-11	METAL CHIP	33K	5%	1/16W
R317	1-216-836-11	METAL CHIP	18K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R321	1-216-833-11	METAL CHIP	10K	5%	1/16W
R322	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R325	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R327	1-216-864-11	METAL CHIP	0		
R350	1-216-841-11	METAL CHIP	47K	5%	1/16W
R351	1-216-841-11	METAL CHIP	47K	5%	1/16W
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R403	1-216-821-11	METAL CHIP	1K	5%	1/16W
R404	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R405	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R406	1-216-864-11	METAL CHIP	0		
R407	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R408	1-216-864-11	METAL CHIP	0		
R409	1-216-864-11	METAL CHIP	0		
R411	1-216-864-11	METAL CHIP	0		
R414	1-216-864-11	METAL CHIP	0		
R415	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R416	1-216-817-11	METAL CHIP	470	5%	1/16W
R417	1-216-833-11	METAL CHIP	10K	5%	1/16W
R418	1-216-833-11	METAL CHIP	10K	5%	1/16W
R419	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R420	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R421	1-216-821-11	METAL CHIP	1K	5%	1/16W
R425	1-216-845-11	METAL CHIP	100K	5%	1/16W
R427	1-216-841-11	METAL CHIP	47K	5%	1/16W
R428	1-216-835-11	METAL CHIP	15K	5%	1/16W
R429	1-216-839-11	METAL CHIP	33K	5%	1/16W
R432	1-216-839-11	METAL CHIP	33K	5%	1/16W
R437	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R440	1-216-864-11	METAL CHIP	0		
R501	1-216-837-11	METAL CHIP	22K	5%	1/16W
R502	1-216-837-11	METAL CHIP	22K	5%	1/16W
R503	1-216-833-11	METAL CHIP	10K	5%	1/16W
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W
R509	1-216-833-11	METAL CHIP	10K	5%	1/16W
R510	1-216-833-11	METAL CHIP	10K	5%	1/16W
R513	1-216-845-11	METAL CHIP	100K	5%	1/16W
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W
R515	1-216-857-11	METAL CHIP	1M	5%	1/16W
R517	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R518	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R521	1-216-833-11	METAL CHIP	10K	5%	1/16W
R522	1-216-833-11	METAL CHIP	10K	5%	1/16W
R523	1-216-840-11	METAL CHIP	39K	5%	1/16W
R524	1-216-833-11	METAL CHIP	10K	5%	1/16W
R525	1-216-833-11	METAL CHIP	10K	5%	1/16W
R526	1-216-847-11	METAL CHIP	150K	5%	1/16W
R527	1-216-845-11	METAL CHIP	100K	5%	1/16W
R528	1-216-833-11	METAL CHIP	10K	5%	1/16W
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W
R530	1-216-845-11	METAL CHIP	100K	5%	1/16W
R531	1-216-833-11	METAL CHIP	10K	5%	1/16W
R532	1-216-833-11	METAL CHIP	10K	5%	1/16W
R533	1-216-833-11	METAL CHIP	10K	5%	1/16W
R534	1-216-837-11	METAL CHIP	22K	5%	1/16W
R535	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R536	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R537	1-216-845-11	METAL CHIP	100K	5%	1/16W
R546	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R547	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R560	1-216-833-11	METAL CHIP	10K	5%	1/16W
R561	1-216-864-11	METAL CHIP	0		
R562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R653	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R654	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R655	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R656	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R657	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R658	1-216-841-11	METAL CHIP	47K	5%	1/16W
R666	1-216-819-11	METAL CHIP	680	5%	1/16W
R667	1-216-821-11	METAL CHIP	1K	5%	1/16W
R672	1-216-821-11	METAL CHIP	1K	5%	1/16W
R678	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R680	1-216-819-11	METAL CHIP	680	5%	1/16W
R681	1-216-820-11	METAL CHIP	820	5%	1/16W
R682	1-216-833-11	METAL CHIP	10K	5%	1/16W
R683	1-216-857-11	METAL CHIP	1M	5%	1/16W
R684	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R685	1-216-848-11	METAL CHIP	180K	5%	1/16W
R686	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R687	1-216-833-11	METAL CHIP	10K	5%	1/16W
R688	1-216-841-11	METAL CHIP	47K	5%	1/16W
R689	1-216-843-11	METAL CHIP	68K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R690	1-216-839-11	METAL CHIP	33K	5%	1/16W
R691	1-216-849-11	METAL CHIP	220K	5%	1/16W
R692	1-216-833-11	METAL CHIP	10K	5%	1/16W
R693	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R694	1-216-848-11	METAL CHIP	180K	5%	1/16W
R695	1-216-844-11	METAL CHIP	82K	5%	1/16W
R698	1-216-837-11	METAL CHIP	22K	5%	1/16W
R699	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R700	1-216-855-11	METAL CHIP	680K	5%	1/16W
R701	1-216-837-11	METAL CHIP	22K	5%	1/16W
R750	1-216-695-11	METAL CHIP	68K	0.5%	1/10W
R751	1-216-833-11	METAL CHIP	10K	5%	1/16W
R752	1-216-105-00	METAL CHIP	220K	5%	1/10W
R753	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R754	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R755	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R800	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R801	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R802	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R803	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R805	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R806	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R807	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R808	1-216-847-11	METAL CHIP	150K	5%	1/16W
R809	1-216-821-11	METAL CHIP	1K	5%	1/16W

< CRYSTAL >

X501	1-578-689-21	VIBRATOR

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* A-7062-124-A VF-26 BOARD, COMPLETE

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(Ref.No 8,000 Series)

< CAPACITOR >

C901		1-126-369-11	ELECT	220uF	20%	6.3V	
C902		1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C904		1-127-515-11	ELECT(SOLID)	47uF	20%	6.3V	
C905		1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C906		1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C907	⚠·	1-162-625-11	CERAMIC CHIP	0.0047uF	5%	50V	
C908	⚠·	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C909		1-126-193-11	ELECT	1uF	20%	50V	
C911		1-131-388-00	TANTAL	68uF	10%	6.3V	
C912		1-102-038-00	CERAMIC	0.001uF			
C913		1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C915		1-126-193-11	ELECT	1uF	20%	50V	
C916		1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	(TYPE 1)

Ref. No.		Part No.	Description				Remark
C916		1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	(TYPE 2)
C917		1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V	(TYPE 2)
C917		1-135-166-21	TANTALUM CHIP	47uF	10%	10V	(TYPE 1)
C918		1-162-638-11	CERAMIC CHIP	1uF		16V	
C919		1-135-070-00	TANTALUM CHIP	0.1uF	10%	35V	
C920		1-164-232-11	CERAMIC CHIP	0.01uF		50V	

< CONNECTOR >

CN901	*	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P
CN902	*	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P
CN904		1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P

< CONPOSITION CIRCUIT BLOCK >

CP901	1-238-119-11	RES, ADJ

< SOCKET >

CRT901	1-526-978-21	SOCKET ASSY, CRT

< DIODE >

D903	8-719-400-20	DIODE MA152WA
D955	8-719-404-19	DIODE LN1251C

< IC >

IC901	8-759-420-01	IC AN2512S (TYPE 1)
IC901	8-759-511-01	IC BA7147F (TYPE 2)
IC901	8-759-514-92	IC XRA7147F (TYPE 2)

< COIL >

L901		1-410-645-31	INDUCTOR 100uH
L902		1-410-385-11	INDUCTOR CHIP 22uH
L903	⚠·	1-459-858-11	COIL, FERRITE (HLC)

< TRANSISTOR >

Q902	⚠·	8-729-402-31	TRANSISTOR	2SD1819A-Q
Q903		8-729-420-81	TRANSISTOR	2SD874A-R
Q904		8-729-216-31	TRANSISTOR	2SA1163-G

< RESISTOR >

R902	⚠·	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	(TYPE 1)
R903		1-216-041-00	METAL CHIP	470	5%	1/10W	
R904	⚠·	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R906	⚠·	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R907		1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R908		1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R909		1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R911		1-216-079-00	METAL CHIP	18K	5%	1/10W	
R914		1-216-133-00	METAL CHIP	3.3M	5%	1/10W	
R915		1-216-133-00	METAL CHIP	3.3M	5%	1/10W	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R916	1-216-125-00	METAL CHIP 1.5M 5% 1/10W	
R917	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R919	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R920	1-216-111-00	METAL CHIP 390K 5% 1/10W	(TYPE 2)
R920	1-216-113-00	METAL CHIP 470K 5% 1/10W	(TYPE 1)
R921	1-216-011-00	METAL CHIP 27 5% 1/10W	(TYPE 2)
R921	1-216-013-00	METAL CHIP 33 5% 1/10W	(TYPE 1)
R922	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R923	1-216-025-00	METAL CHIP 100 5% 1/10W	
R924	1-216-306-11	METAL CHIP 3.9 5% 1/10W	
R925	1-216-334-11	METAL CHIP 22K 1% 1/10W	(TYPE 2)
R925	1-216-336-11	METAL CHIP 47K 1% 1/10W	(TYPE 1)
R926	1-216-091-00	METAL CHIP 56K 5% 1/10W	(TYPE 2)
R926	1-218-163-11	METAL CHIP 120K 1% 1/10W	(TYPE 1)
R928	1-216-870-11	METAL CHIP 180K 1% 1/10W	
R929	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(TYPE 1)
R929	1-216-073-00	METAL CHIP 10K 5% 1/10W	(TYPE 2)
R930	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R931	1-216-121-00	METAL CHIP 1M 5% 1/10W	(TYPE 1)
R950	1-216-041-00	METAL CHIP 470 5% 1/10W	
R951	1-216-295-00	METAL CHIP 0 5% 1/10W	

< VARIABLE RESISTOR >

RV901	1-238-647-11	RES, ADJ, METAL GLAZE 4.7M	

< TRANSFORMER >

T901 ⚠	1-439-428-11	TRANSFORMER ASSY, FLYBACK	

< THERMISTOR >

TH901	1-807-938-11	THERMISTOR	

##

* A-7062-125-A VF-27 BOARD, COMPLETE
######################
(Ref.No 9,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C901	1-124-442-00	ELECT 330uF 20% 6.3V	
C903	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	
C904	1-126-160-11	ELECT 1uF 20% 50V	
C905	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C906	1-131-381-00	TANTALUM 47uF 10% 10V	
C907	1-162-638-11	CERAMIC CHIP 1uF 16V	
C908	1-136-165-00	FILM 0.1uF 5% 50V	
C909	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C910	1-124-587-11	ELECT 220uF 20% 6.3V	
C911	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C912 ⚠	1-162-625-11	CERAMIC CHIP 0.0047uF 5% 50V	
C913 ⚠	1-162-625-11	CERAMIC CHIP 0.0047uF 5% 50V	
C914 ⚠	1-163-209-00	CERAMIC CHIP 0.0015uF 5% 50V	
C915	1-126-090-11	ELECT 82uF 20% 10V	
C916	1-126-163-11	ELECT 4.7uF 20% 50V	
C918	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C919	1-102-038-00	CERAMIC 0.001uF	

< CONNECTOR >

CN902 *	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN903 *	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN904	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	

< DIODE >

D903	8-719-400-20	DIODE MA152WA	
D955	8-719-404-19	DIODE LN1251C	

< IC >

IC901	8-759-420-01	IC AN2512S	

< COIL >

L901	1-410-831-21	INDUCTOR 82uH	
L902	1-408-977-21	INDUCTOR 39uH	
L903 ⚠	1-459-858-11	COIL, FERRITE (HLC)	
L903 ⚠	1-459-876-21	COIL, FERRITE (HLC)	

< TRANSISTOR >

Q902	8-729-100-66	TRANSISTOR 2SC1623	
Q903	8-729-216-31	TRANSISTOR 2SA1163-G	
Q904	8-729-100-66	TRANSISTOR 2SC1623	
Q905	8-729-106-68	TRANSISTOR 2SD1615A-GP	

< RESISTOR >

R901 ⚠	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R903	1-216-041-00	METAL CHIP 470 5% 1/10W	
R904 ⚠	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R905	1-216-007-00	METAL CHIP 18 5% 1/10W	
R906	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R908	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R909	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R910	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R911	1-216-013-00	METAL CHIP 33 5% 1/10W	
R912	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R913	1-218-163-11	METAL CHIP 120K 1% 1/10W	
R914	1-216-025-00	METAL CHIP 100 5% 1/10W	
R915	1-216-306-11	METAL CHIP 3.9 5% 1/10W	
R917	1-216-045-00	METAL CHIP 680 5% 1/10W	
R918	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	

Note:	**Note:**
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Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Ref. No.	Part No.	Description	Remark
R919	1-216-748-11	METAL CHIP 39K 5%	1/10W
R920	1-216-748-11	METAL CHIP 39K 5%	1/10W
R921	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R922	1-216-101-00	METAL CHIP 150K 5%	1/10W
R923	1-216-121-00	METAL CHIP 1M 5%	1/10W
R924	1-216-131-11	METAL CHIP 2.7M 5%	1/10W
R925	1-216-131-11	METAL CHIP 2.7M 5%	1/10W
R926	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R928 ⚠·	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R933	1-216-121-00	METAL CHIP 1M 5%	1/10W
R950	1-216-041-00	METAL CHIP 470 5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV901	1-230-873-11	RES, ADJ, METAL47K	
RV902	1-230-866-11	RES, ADJ, METAL470	
RV903	1-230-869-11	RES, ADJ, METAL4.7K	
RV904	1-228-762-00	RES, ADJ, METAL GLAZE 1M	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T901 ⚠·	1-439-431-11	TRANSFORMER ASSY, FLYBACK	

< THERMISTOR >

Ref. No.	Part No.	Description	Remark
TH901	1-807-938-11	THERMISTOR	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
W901	1-540-019-21	SOCKET ASSY, CRT	

****

MISCELLANEOUS
****

Ref. No.	Part No.	Description	Remark
121	* 8-814-268-00	MICROPHONE C-2033 SET	
214	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
222	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
263	1-808-505-12	SENSOR (DEW)	
404	⚠1-466-230-21	CONVERTER UNIT, D/D	
406	1-547-482-11	LENS, ZOOM (VCL-8508XJ)	
410	1-547-381-12	FILTER BLOCK, OPTICAL	
413	8-752-604-58	IC ICX038AN-2 (CCD IMAGER)	
L901-1⚠·	1-451-310-21	DEFLECTION YOKE (B/W)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING	
S903	1-572-320-11	SWITCH, PUSH (ZOOM)	
V901-1⚠·	1-546-085-11	CATHODE-RAY TUBE, B/W	
V901-2⚠·	1-452-482-11	CRT ASSY (M91JYZ60WB)	

****

※ For replacement of CCD imager, CD-53 board, complete and DT-77 board, complete read carefully the CAUTIONS FOR REPLACEMENT OF CCD IMAGER on page 119.

ACCESSORY & PACKING MATERIAL
****

Ref. No.	Part No.	Description	Remark
	A-6767-816-A	ADAPTOR, RFU (RFU-89NA) (E)	
	A-6768-253-A	ADAPTOR, RFU (RFU-90UC) (US/CND)	
	1-465-395-41	COMMANDER, REMOTE (RMT-502)	
	1-571-163-31	SWITCH, ANTENNA CHANGE (CABLE) (E)	
	1-575-334-11	CORD, CONNECTION (AV 3P-3P)	
	* 1-575-335-21	CORD, CONNECTION (S VIDEO)	
	3-340-514-01	BAG, PROTECTION	
	3-741-582-01	BELT, SHOULDER	
	3-753-112-21	MANUAL, INSTRUCTION (ENGLISH) (US/CND)	
	3-753-112-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-753-655-11	MANUAL, INSTRUCTION (ENGLISH/SPANISH) (E)	
	3-753-655-41	MANUAL, INSTRUCTION (CHINESE) (E)	
	* 3-795-581-21	SAFEGUARD (SONY), IMPORTANT (US)	
	* 3-940-119-21	INDIVIDUAL CARTON (US/CND)	
	* 3-940-119-81	INDIVIDUAL CARTON (E)	
	* 3-940-910-01	CUSHION, ACC	
	* 3-942-402-01	CUSHION (UPPER)	
	* 3-942-403-01	CUSHION (LOWER)	

** AC ADAPTOR (AC-V35)
*** BATTERY PAC (NP-66H)

Note

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORIES.

****

HARDWARE LIST

# 1	7-685-103-19	+ PTPWH (2X5)
# 2	7-627-554-07	PRECISION SCREW +P 2X2.2 TYPE3
# 3	7-627-553-48	PRECISION SCREW +P 2X4 TYPE 3
# 4	7-627-553-37	SCREW (M2X3), SPECIAL HEAD
# 5	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3
# 6	7-627-853-57	SCREW, +P 2X5 TYPE 3
# 7	7-627-555-88	SCREW (M1.4X1.8)
# 8	7-621-255-25	SCREW +BVTT 2X4 (S)
# 9	7-621-255-15	SCREW +P 2X3
#10	7-627-553-47	SCREW, PRECISION +P 2X4
#11	7-621-281-15	SCREW +P 2X2
#12	7-671-155-01	STEEL BALL 3.0

****

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Email:- enquiries@mauritron.co.uk

CCD-V600/V701
RMT-502

SONY®
SERVICE MANUAL

US Model
Canadian Model
CCD-V701

E Model
CCD-V600

ADJUSTMENTS
EXPLODED(ZOOM LENS BLOCK ASSEMBLY)

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The color reproduction standard frame is contained after the adjustment elements location of camera adjustment parts.

SECTION 1
SERVICE MODE

☆This unit adopts the camera adjustment and the EVR (Electronic Variable resistor) with the SENSER LANC system.

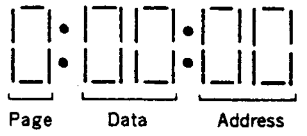
<SENSER LANC>
SENSER LANC is the LANC format to adjust the EVR (Electronic Variable resistor) of Video 8 Handycam and to perform tests by using the LANC (control L). This word stands for the same as the SERVICE LANC formerly used, however, the unified word "SENSER LANC" will be used with this substantial functions.

1-1. HOW TO USE RM-95 JIG (REMOTE CONTROL FOR ADJUSTMENT)

RM-95 jig is used to operate the SENSER LANC. HOLD switch of this jig is remodelled for service to get the SENSER LANC mode. Replacing microcomputer in RM-95 is required for the old-model RM-95 jig, which has no page display function.

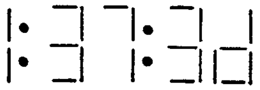
Old model	μPD7503G-A71-12 μPD7503G-C23-12	8-759-142-56 8-759-146-77	Page is not displayed (Replacing microcomputer is required)
New model	μPD7503G-C56-12	8-759-148-35	Page is displayed

LCD display of RM-95



⇨

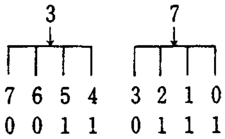
Example



This means that the page 1 and address 3D is data of 37.

- Reference between Data and Bit

When the data is 37 ⇨ Bit



Page	Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	3D	MP-HG		ME/MP	REC PROOF	V MUTE	A MUTE	JOG	VA PB MODE
		0	0	1	1	0	1	1	1

The data in the above list means as follows:
ME SW ....ON
REC PROOF SW ....ON
Audio mute ....ON
JOG..................ON
VA PB MODE........ON

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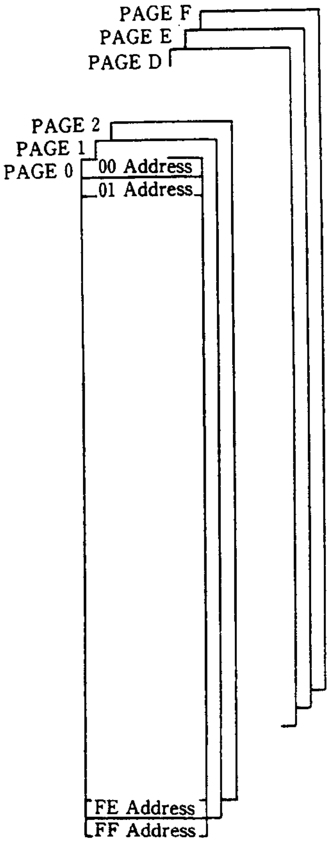
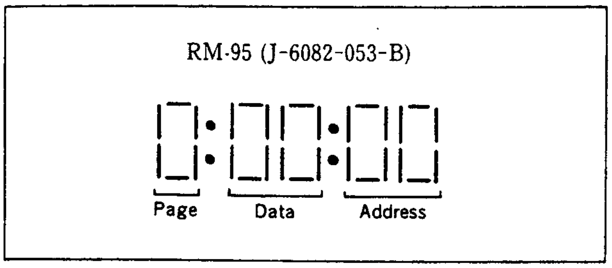
1-1-1. SENSER LANC Memory Map

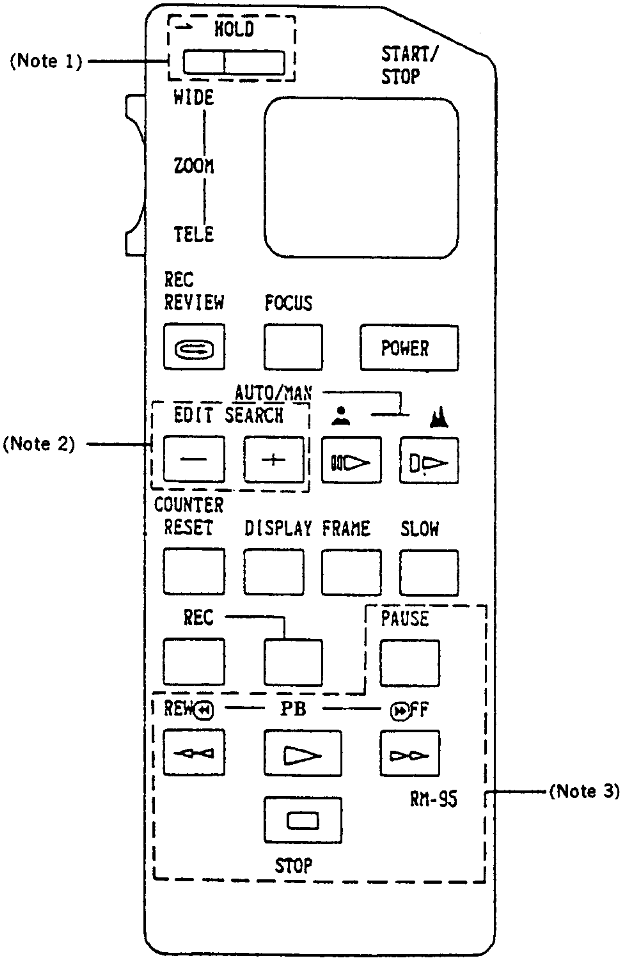


PAGE	Page allocation	Description
0	Service	
1	Mode Control RAM	RAM and I/O interface data memory area required for operating the mode controller. Data is not held when the power is turned off because this area is not ROM.
2	Mode Control I/O	
3	Mechanical Control RAM	RAM and I/O memory area of the mechanical controller.
4	Mode Control I/O	
5	Camera microcompuler RAM	RAM and I/O memory area of the camera micro controller.
6	Camera microcompuler I/O	
7	Spare	
8	Spare	
9	Spare	
A	Spare	
B	Spare	
C	Spare	
D	VTR EE-PROM	ROM memory area of the VTR part. Data of this area is held by EE-PROM when the power is tuned off. Releasing protect is required for changing data.
E	Camera EE-PROM2	ROM memory area of the camera part. Data of this area is held by EE•P•ROM when the power is tuned off.
F	Camera EE-PROM1	

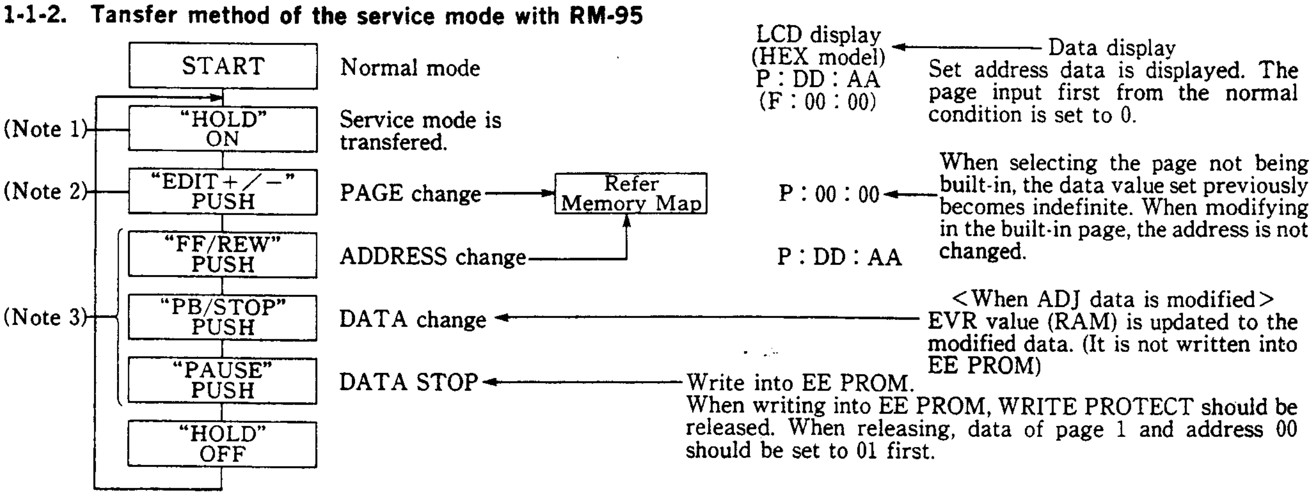
Note) There are 16 types of page from 0 to F. The allocation of page is as the above list. Only the memory of page D, E and F is not erased when the power is turned off as the EVR (Electronic Variable resistor).


RM-95 (J-6082-053-B)
0:00:00
Page
Data
Address

RM-95 (J-6082-053-B)


(Note 1)
HOLD
START/
STOP
WIDE
ZOOM
TELE
REC
REVIEW
FOCUS
POWER
AUTO/MAN
EDIT SEARCH
(Note 2)
COUNTER
RESET
DISPLAY
FRAME
SLOW
REC
PAUSE
REW
PB
FF
RM-95
(Note 3)
STOP

1-1-2. Tansfer method of the service mode with RM-95


START
Normal mode
(Note 1)
"HOLD" ON
Service mode is transfered.
(Note 2)
"EDIT+/−" PUSH
PAGE change
Refer Memory Map
"FF/REW" PUSH
ADDRESS change
(Note 3)
"PB/STOP" PUSH
DATA change
"PAUSE" PUSH
DATA STOP
"HOLD" OFF
LCD display
(HEX model)
P : DD : AA
(F : 00 : 00)
Data display
P : 00 : 00
P : DD : AA

Set address data is displayed. The page input first from the normal condition is set to 0.

When selecting the page not being built-in, the data value set previously becomes indefinite. When modifying in the built-in page, the address is not changed.

<When ADJ data is modified>
EVR value (RAM) is updated to the modified data. (It is not written into EE PROM)

Write into EE PROM.
When writing into EE PROM, WRITE PROTECT should be released. When releasing, data of page 1 and address 00 should be set to 01 first.

Command name	Command function	Function Button with RM-95
Page Up	Page+ 1	Edit Search+
Page Down	Page− 1	Edit Search−
Direct Page Set	Set to direct page	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address−1	Rewind
Data Up	Data+ 1	Play Back
Data Down	Data−1	Stop
Store	Write data into EEPROM. RAM	Pause

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1-1-3. ADJUST, TEST MODE description

MODE		PAGE/DATA/ADDRESS	Contents
ADJUST	Switching Position Adjustment	d : -- : 04 (high) d : -- : 05 (low)	Switching position adjustment See to page 58 for details
	Battery Down Adjustment	d : -- : 06 (Sensor value) d : -- : 07 (Set value)	Use for battery down adjustment See to page 57 for details
TEST MODE	Pass Adjustment Truck Shift	1 : 30 : 4D	Truck shift for pass adjustment Set to the data described left and set the playback mode.
	Emergency Inhibit	1 : 10 : 4D	Detection of emergency is inhibited. Even if battery is ended, power is not turned off. SP/LP is not automatically distinguished. Emergency detection except for TAPE/TOP•END is inhibited.
	Emergency Code	D : -- : 20~22 D : -- : 24~26	First emergency is displayed. Last emergency is displayed. (※ See to 1) (IC501 μPD75312GF-018 and 024 are not displayed.)
	RECOG SW Check	1 : -- : 3D 1 : -- : 3E	Mode switch position is displayed. RECOG SW ON OFF is displayed. (※ See to 2)
	Function SW Check	1 : -- : E8~ED	Pressing KEY is checked. (※ See to 3)
	Motor single check	3 : 10 : DD (Loading Ⓜ) 3 : 11 : DD (Drum Ⓜ) 3 : 12 : DD (Capstan Ⓜ)	Rotating in right direction, inverting, stopping of each motor can be separately controlled. • Loading Motor • Drum Motor (※ See to 4) • Capstan Motor
	Sensor check	3 : 21 : DD	The following sensor is input by performing A/D selecting, and the A/D selecting value can be confirmed. TOP sensor, End sensor, S REEL FG, T REEL FG, Thermistor for SWP correction DEW sensor. (※ See to 5)
	Reception contents check of wireless remote control	1 : -- : 1E and 1D	The received code contents of the remote control code can be confirmed. (※ See to 6)

※ 1 Emergency Code Check

With the SENSER LANC (The emergency code has the first emergency and last emergency. The last emergency side is changed when emergency is generated ; the first emergency side records the only code generated first.)

			First	Last	
PAGE	D	ADDRESS	20, 21	24, 25	← Emergency code
PAGE	D	ADDRESS	22	26	← Mode when emergency is generated

Displayed → Be sure to rewrite the address from 20 to 26 to data 00 after the operation.

(1) Emergency code list

Code		Emergency contents
20H,24H	21H,25H	
00	00	Normal mode
01	00	Loading Motor emergency.
02	00	Unloading, Reel emergency.
04	00	Steady, Reel emergency.
08	00	Capstan emergency.
00	01	Drum steady, FG emergency.
00	02	Drum steady, PG emergency.
00	21	Drum steady, FG emergency.
00	22	Drum steady, PG emergency.
00	41	Loading, Drum FG emergency.
00	42	Loading, Drum PG emergency.
00	81	Unloading, Drum FG emergency.
00	82	Unloading, Drum PG emergency.
——	——	Dram steady Phase emergency.

- In order to delete the contents of 〔the first and the last emergency〕, write with SENSOR LANC as follows.

Page 1	Address 00	Data 01

After that, write data 00 into each address. After writing, return to

Page 1	Address 00	Data 00

(2) Mode code

Mode	Code	Mode	Code
STOP	20	EDIT S CUE	5A
FF	30	EDIT S REV	5B
REW	38	EDIT S STIL	5F
PB	60	+×1	62
CUE	64	−×1	63
REV	65	−STILL	79
STILL	70	+FRAME	76
REC	40	−FRAME	77
REC. P	41	+×2	66
SHUTTLE EDIT (+)	5A	−×2	62
SHUTTLE EDIT (−)	5B	LOADING	21
CAM STBY	41	UNLOADING	13
CAM REC	40	EJECTED	10
REC REV+	58	+SLOW	72
REC REV−	59	−SLOW	73

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Note : Pay attention that the above codes are displayed in the reverse order when FD-15 board IC201 μPD75312GF-018 and 024 are mounted.
Example) PB 06

※ 2 RECOG SW Check

With the SENSER LANC

Page	Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	3D	MP-HG		ME/MP	REC PROOF	V MUTE	A MUTE	JOG	VA PB MODE

"1" = REC inhibit

"1" = ME/ 0 : MP

"1" = MPHG/ 0 : Normal

Page	Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	3E	DEW			RP PB MODE	CASSETTE CONTROLLER LOCK	MODE SW2	MODE SW1	MODE SW0

See to the following list

When locking the cassette controller, "1"

- MODE SW CODE LIST

	Address 3E contents			Real port condition			Remark
Position	M SW2	M SW1	M SW0	M SW2	M SW1	M SW0	
EJECT	0	0	0	L	H	H	Cassette controller eject position
IA	0	0	1	H	H	H	Interval A
UNLOAD	0	1	0	L	L	H	Normal EJECT unloaded
IB	0	1	1	H	L	H	Interval B
STOP	1	0	0	H	L	L	STOP mode position
IC	1	0	1	H	H	L	Interval C
FWD	1	1	0	L	H	L	Pinch pressure welded
ID	1	1	1	L	L	L	Interval D
SHAKING HEAD POSITION	0	0	0	L	H	L	Shaking head ptsition

☆ This mode releasing is turn off the SENSER LANC.

※ **3 Switch check** (See to the previous page for reading code.)

With the SENSER LANC :

Page 1	Address E8 to ED	Data Refer to table

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Address	K IN 7	K IN 6	K IN 5	K IN 4	K IN 3	K IN 2	K IN 1	K IN 0
E8 K OUT 0	EXPOSURE	COSTROL UP	PAUSE	REC	PLAY	REW	FF	STOP
E9 K OUT 1	SHUTTER	CONTROL DOWN	SLOW	FRAME /RVS	——	MENU ▼	DATA SCREEN	VTR
EA K OUT 2	FADER	AE	FRAME /FWD	MENU EXEC	MENU	MENU ◀	MENU ▶	CAM
EB K OUT 3	ONE PUSH	WB	START/ STOP	——	——	RVS	EDIT CUE	STBY
EC K OUT 4	ZERO MEMORY	TIME	DATE	EJECT	——	——	COUNTER RESET	FOCUS
ED K OUT 5	COLOR	MERORY	TITLE2	TITLE1	——	——	——	AUTO LOCK

☆ This mode releasing is turn off the SENSER LANC.

- Check the initial set value in shipping after the service, because EE PROM is monuted to VTR in this unit.

D Page Initial set value in shipping (for this unit)

Address	Contents					Set value
000	Aging mode					00
001	Each flag area (destination/model /HEAD widthl×2MUTE)					5A
002	VTR REC key acceptance authorization					01
003						--
004	Switching position (low)					Adjustment value
005	Switching position (high)					Adjustment value
006	Battery A/D modification value					Adjustment value
007	Battery end set area					Adjustment value
010	SR data storage area	EDIT OFF	MP	HI8	LP	6F
011	SR data storage area	EDIT OFF	MP	HI8	SP	65
012	SR data storage area	EDIT OFF	MP	NOR	LP	5C
013	SR data storage area	EDIT OFF	MP	NOR	SP	58
014	SR data storage area	EDIT OFF	ME	HI8	LP	6F
015	SR data storage area	EDIT OFF	ME	HI8	SP	65
016	SR data storage area	EDIT OFF	ME	NOR	LP	5C
017	SR data storage area	EDIT OFF	ME	NOR	SP	58
018	Titler vertical position adjustment area JOG mode					0C
019	Titler vertical position adjustment area NOR mode					06
01A	Titler horizontal position adjustment area playback mode					33
01B	Titler horizontal position adjustment area EE mode					33
01C	When SR data storage area EDIT is ON : Hi8 mode					65
01D	When SR data storage area EDIT is ON : Normal mode					5C
01E						--
01F						--
020	First generated emergency code (low) (First emergecy)					00
021	First generated emergency code (high) (First emergency)					00
022	Mode code when emergency is generated first					00
023						00
024	Last generated emergency code (low) (Last emergency)					00
025	Last generated emergency code (high) (Last emergency)					00
026	Mode code when emergency is generated last.					00

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※ 4 In order to operate the motor singly

[Operation]

Write the following number with the SENSER LANC into | Page 3 | Address DD. |

Then the check of each motor is performed.

10H → Loading motor
11H → Drum motor
12H → Capstan motor

After the set of the above data, operation is performed by pressing the following keys. (When the operation is performed with RM-95, set the HOLD switch to left and release the SENSER LANC.)

FF key → Rotating in right direction
REW key → Inverting
STOP key → Stop

Note) In this mode, operation is only performed on the normally loaded condition.

Note) The motor rotating speed is the normal rotating number. (Drum 30Hz, Capstan SP mode speed, Loading normal speed).

In order to release this mode, turn off the SENSER LANC and turn off the power.

※ 5 In order to read the A/D selecting value (Senser check)

[Operation]

With the SENSER LANC:

Write | PAGE 3 | Address DD | Data 21 |

The following address (PAGE 3) of the A/D selecting value of each A/D port is displayed.

Address	Selecting value Contents
65	TOP sensor (light ON)
67	TOP sensor (light OFF)
64	END sensor (light ON)
66	END sensor (light OFF)
62	S-REEL FG
63	T-REEL FG
60	Thermistor (for SWP correction)
5F	DEW sensor

The voltage of A/D selecting 1 step: $4.9 \div 256 \fallingdotseq 19\text{mV}$

※ 6 In order to check the reception contents of the wireless remote control

With SENSER LANC, the received remote control code is displayed to | PAGE 1 | Address 1E. |

The remote control code is only displayed while the code which the LANC code is shifted to right for 1 bit is pressed, and FF is displayed when the code is released.

The received category code of the remote control is displayed to the upper 4 bit of | PAGE 1 | Address 1D. |

(The description of the remote control code is omitted in this chart.)

1-1-4. How to use practically

How to use:

How to set the adjustment mode and the TEST mode

Set RM-95 to the service mode.

How to change and write data

Press the PAUSE button of RM-95. Pressing PAUSE button is not required for some RAM and I/O area.

Change and write data of EE-PROM

Removing PROTECT is required. The PROTECT is removed by setting as follows:

PAGE 1	Address 00	Data 01

(But CAMERA system don't need release, because don't set PROTECT.)

How to release each mode

Releasing from EE-PROM area	Be sure to return the data of PAGE 1 address 00 to 00 from 01, and then turn off the service mode of RM-95.
Releasing from RAM and I/O area	Turn off the service mode or turn off the power, because hoding of data is not required.

- In order to perform the pass track shift......Refer to page 13.
- In order to inhibit the emergency detection......Refer to the list in page 8.
- In order to check the emergency code......Refer to page 8.
- In order to operate the motor singly......Refer to page 11.
- In order to check the function switch......Refer to page 10.
- In order to check the mechanical switch......Refer to page 9.
- In order to read the A/D selecting value......Refer to page 11.
- In order to check the reception contents of the wireless remote control......Refer to page 11.

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SECTION 2
MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

Refer to mechanical adjustment (8 mm Video MECHANICAL ADJUSTMENT MANUAL III) manual for the adjustments and checks of mechanism section and the mechanical parts replacement. (9-972-732-11)

For setting of the track shift mode, however, refer to the following.

2-1. SETTING THE TRACK SHIFT MODE

Note : Camera part and video part should have been installed.

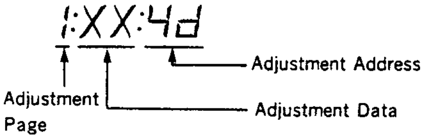
[Setting Method]

1) Set the adjustment commander to the HOLD ON side.
2) Press EDIT SEARCH + button once, and select page 1.
3) Select the adjustment address 4D with FF or REW button.
4) Set to 3X with PLAY and STOP button. (Setting of track shift mode)

Note : 3X should be the number from 31 to 3F. (To display "3X" with PLAY and STOP button is simple to shift.)

(When HOLD OFF once after the setting and HOLD ON again, the display of the address data will be changed. To set the another mode with shifting, repeat the procedures from 3).)

5) Set to the HOLD OFF side in order to set the normal mode.



(1X : TEST 1
2X : TEST 2 ('CH Playback)
3X : TEST 3 (Shift mode)
4X : Shift release)

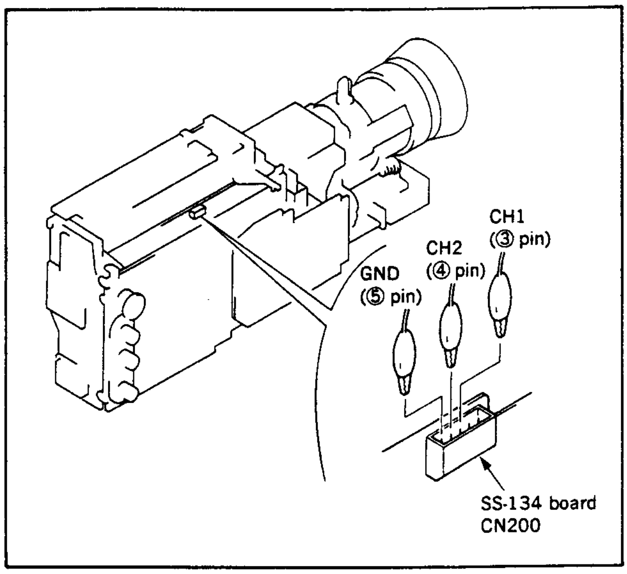


Fig. 2-1.

2-2. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surfaces (tape guide, drum, capstan shaft, pinch roller.)
2) Connect to the oscilloscope.
   CH1 : SS-134 board CN200 pin ③ (RF OUT)
   CH2 : SS-134 board CN200 pin ④ (RF SWP)
3) Play back the tracking alignment tape (WR5-1NP) (8-967-995-02).
4) Check that the RF waveform of the oscilloscope is flat at both inlet and outlet sides. When not flat, make adjustment as follows. (Refer to Figs. 2-1 and 2-2.)

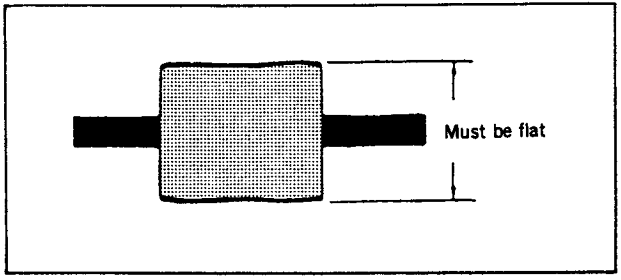


Fig. 2-2.

For disassembling the cabinet and each board, refer to the Service Manual, SECTION 2 Disassembly

2-3. HOW TO DISASSEMBLE LENS UNIT

2-3-1. How to Remove Camera Frame (Refer to Fig. 2-3.)

1) Remove screw ❶ and disassemble D/D converter unit ❷.
2) Remove 4 screws ❸ and camera frame ❹.

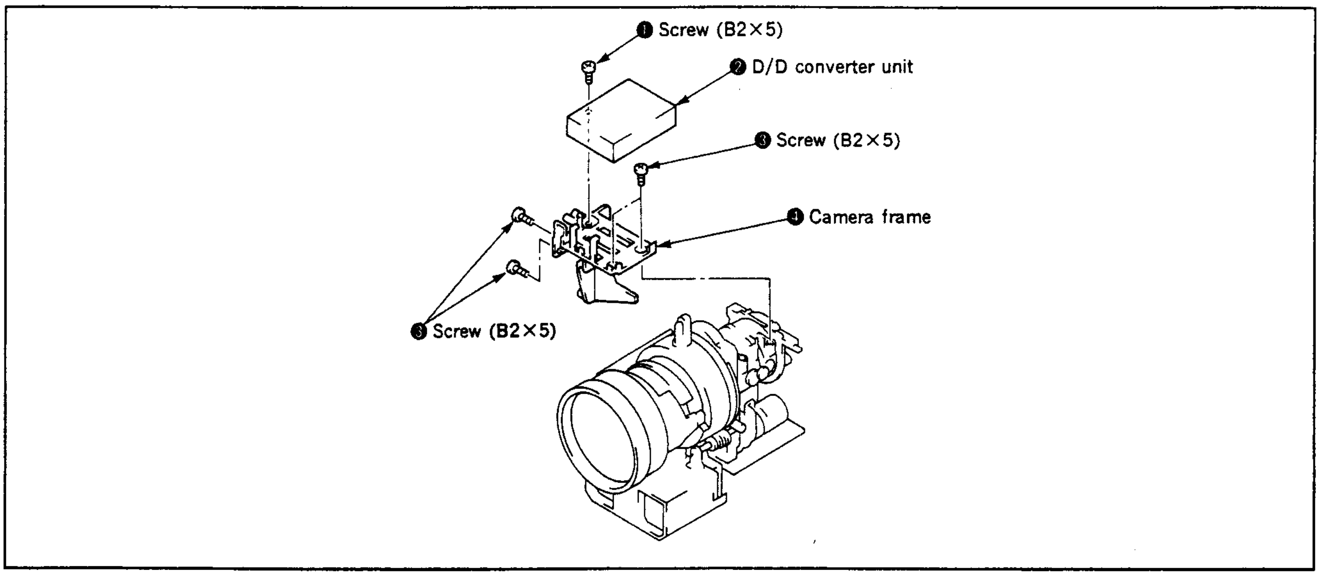

❶ Screw (B2×5)
❷ D/D converter unit
❸ Screw (B2×5)
❹ Camera frame
❸ Screw (B2×5)

Fig. 2-3.

2-3-2. How to Remove AF Motor and PZ Motor and SW Board (Refer to Fig. 2-4.)

1) Remove screw ❶ and then remove AF motor ❷ and connector ❸.
2) Remove screw ❹ and then remove PZ motor ❺.
3) Remove screw ❻ and then SW board ❼ and connector ❽.

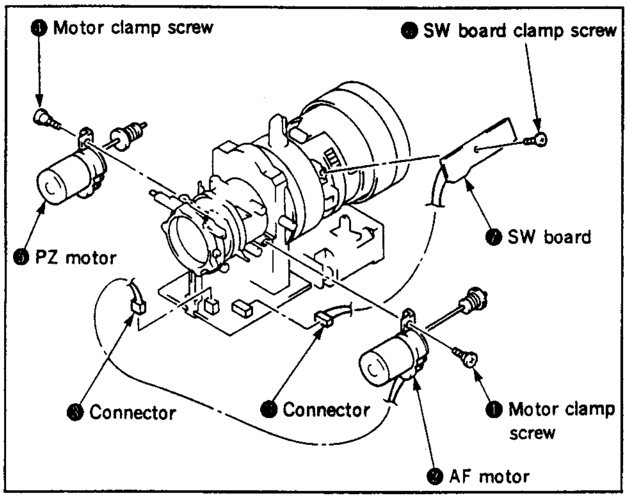

❹ Motor clamp screw
❻ SW board clamp screw
❼ SW board
❺ PZ motor
❽ Connector
❸ Connector
❶ Motor clamp screw
❷ AF motor

Fig. 2-4.

2-3-3. How to Remove AF Board and IG meter (Refer to Fig. 2-5.)

1) Remove screw ❶ and then remove AF board ❷ and connector ❸.
2) Remove IG meter ❹.

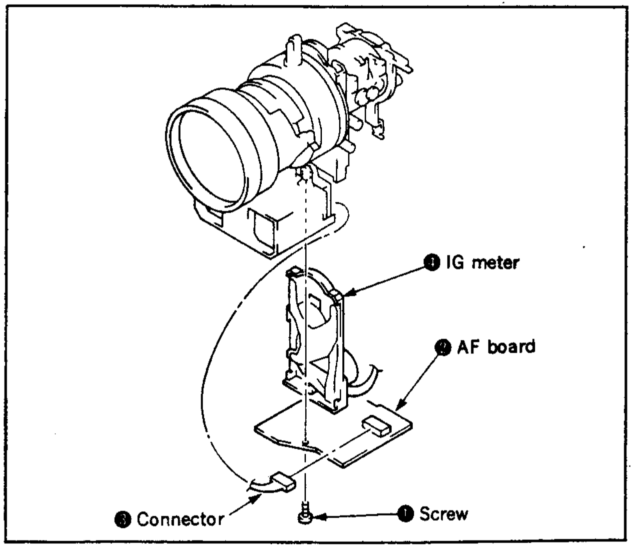

❹ IG meter
❷ AF board
❸ Connector
❶ Screw

Fig. 2-5.

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2-3-4. How to Remove AF Block (Refer to Fig. 2-6.)

1) Remove 2 screws ❶ and then remove AF block ❷.

Note : The screw on the IRED lens cylinder side is covered with a tape and can not be seen. Be sure to affix the tape when reassembling.

Note : When mounting AF block, make sure that the distance ring can surface ⓐ and prism arm ⓑ are properly assembled.

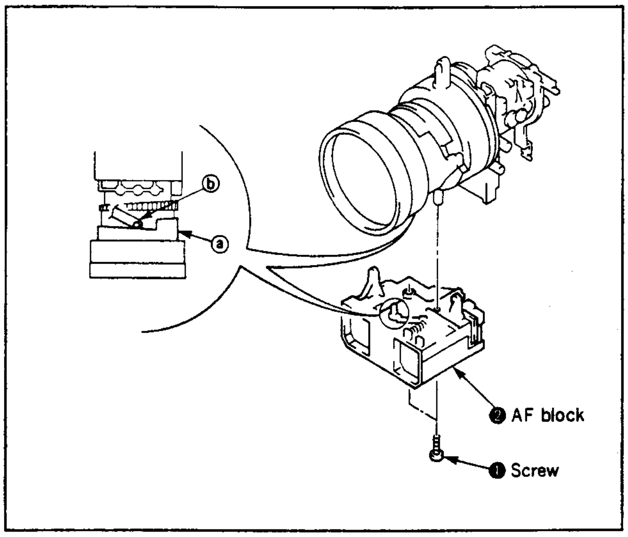
ⓑ
ⓐ
❷ AF block
❶ Screw

Fig. 2-6.

2-3-5. How to Remove Relay Millor Tube Unit (Refer to Fig. 2-7.)

1) Remove 2 screws ❶.
2) Remove eccentric roller ❷ and then remove relay millor tube unit ❸.

Note : After reassembling, be sure to adjust the back focus.

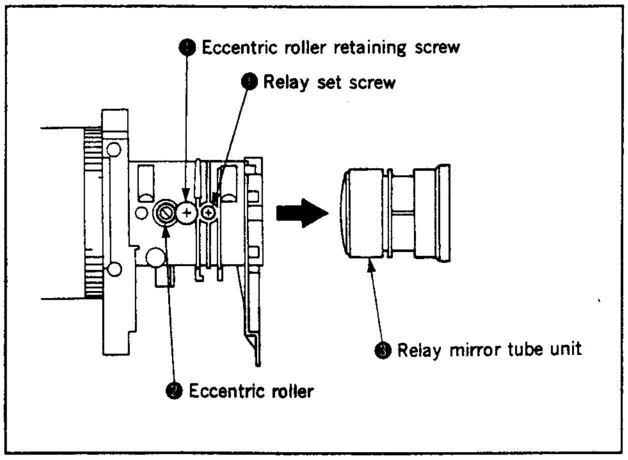
❶ Eccentric roller retaining screw
❶ Relay set screw
❸ Relay mirror tube unit
❷ Eccentric roller

Fig. 2-7.

2-3-6. How to Remove Focus Lens (Refer to Fig. 2-8.)

1) Remove screw ❶ and then remove N stopper ❷.
2) Remove focus lens ❸.

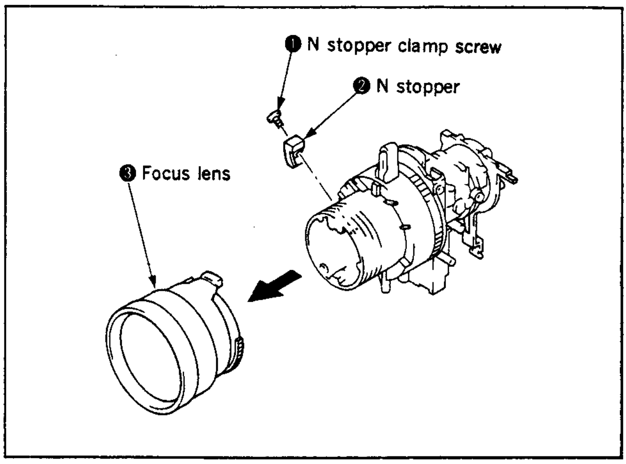
❶ N stopper clamp screw
❷ N stopper
❸ Focus lens

Fig. 2-8.

SECTION 3
CAMERA ADJUSTMENTS

PREPARATION FOR ADJUSTMENT (CAMERA BLOCK)
3-1. LIST OF SERVICING JIGS

- Oscilloscope
- Stabilized power supply (2 units)
- Adjusting screwdriver
- L lench
- Stop watch
- Color monitor TV
- Vectorscope
- Desk-top calculator

Ref. No.	Name	Part No.	Use
J-1	Filter (C14)	J-6080-054-A	Auto white balance adjustment
J-2	ND filter 0.1	J-6080-807-A	
	ND filter 0.3	J-6080-818-A	
	ND filter 0.4	J-6080-806-A	
	ND filter 0.9	J-6080-833-A	
	ND filter 1.0	J-6080-808-A	
J-3	Pattern box PTB-500	J-6029-140-A	
J-4	Color bar chart for pattern box	J-6020-250-A	
J-5	Extension cable (5P)	J-6082-043-A	To connect VC-86 board CN304 and DC-DC converter
	Extension cable (4P)	J-6082-042-A	To connect VC-86 board CN307 and VA-64 board CN650
J-6	Extension cable (12P)	J-6082-056-A	To connect VC-86 board CN305 and FP-376 flexible board
J-7	Camera fixing jig	J-6080-894-A	
J-8	Siemens-star chart Transmission type simens-star chart	J-6080-875-A J-6080-923-A	Either of the siemens-star charts which appear during adjustment may be used.
J-9	Adjustment remote control * 1	J-6082-053-B	
J-10	AF microcomputer data reader jig * 2	J-6082-025-A	
J-11	CPA connector jig	J-6082-109-A	

* 1 Microcomputer IC in the adjustment Remote controller except for μPD7503G-C56-12 (8-759-148-35) does not allow the page selecting. Replace the microcomputer in such a case.

* 2 Change the fixed number of R1 from 10kΩ to 100kΩ in the AF microcomputer data reading jig. (If the number is kept to 10kΩ, the adjustment data can not change because of the difference of of the impedance.)
When adjustment the old-model Handy Cam, 100kΩ is allowed to perform the adustment.

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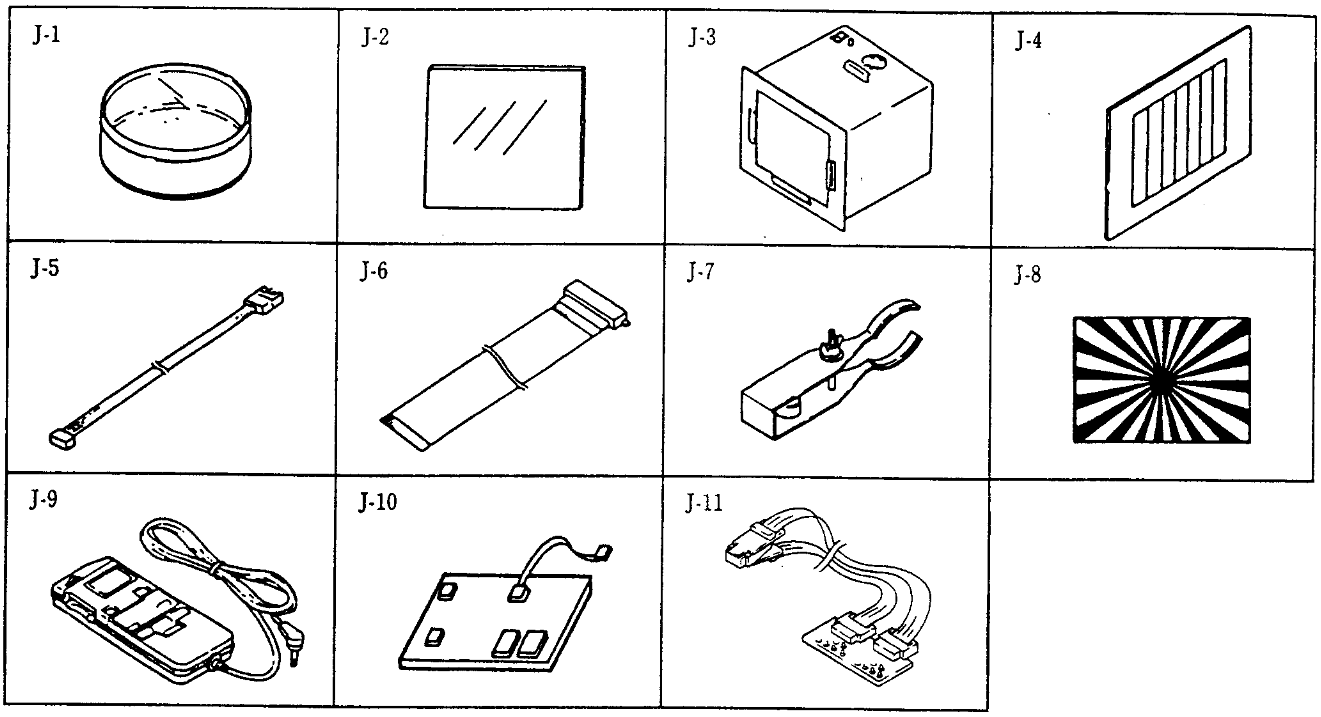

J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
J-10
J-11

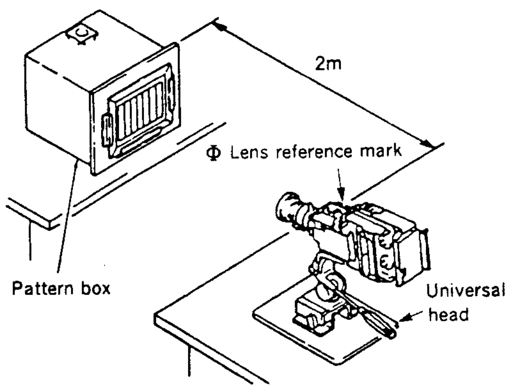
Fig. 3-1.

3-2. PREPARATION FOR ADJUSTMENT

3-2-1. Preparation

Note : Refer to the service manual, "SECTION 2. DISASSEMBLY" for details of the cabinet and individual boards removal procedure.

1) Connect the camera block and the video block by using the extension cable, and other equipment as shown in Fig. 3-3.
2) EVF (Electrical View Finder) section VF-26 or VF-27 boards is necessary for confirmation of shutter speed, white balance mode and etc.
   If not necessary, it can removed by taking out CN703 on the SW-168 board.
3) MIC board (MC-63 board) is not necessary. Remove it by taking out CN801 on the MC-63 board.


2m
Φ Lens reference mark
Pattern box
Universal head

When the camera block and the video block are separated with the cabinet removed, fix by using the camera fixing jig.

Fig. 3-2.

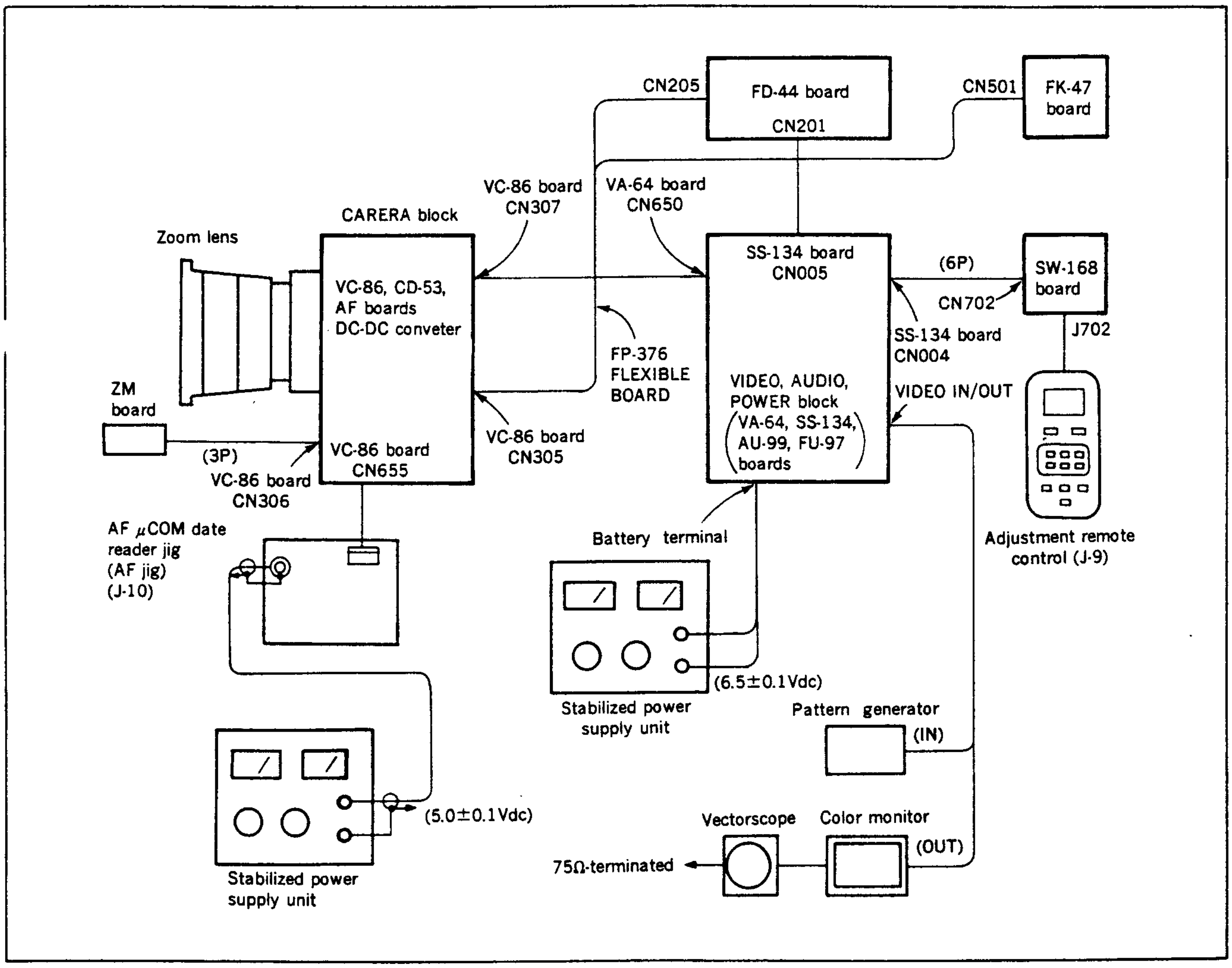

CN205
FD-44 board
CN201
CN501
FK-47 board
VC-86 board CN307
VA-64 board CN650
CARERA block
Zoom lens
VC-86, CD-53, AF boards DC-DC conveter
SS-134 board CN005
(6P)
SW-168 board
CN702
J702
SS-134 board CN004
FP-376 FLEXIBLE BOARD
VIDEO, AUDIO, POWER block (VA-64, SS-134, AU-99, FU-97 boards)
VIDEO IN/OUT
ZM board
(3P)
VC-86 board CN306
VC-86 board CN655
VC-86 board CN305
AF μCOM date reader jig (AF jig) (J-10)
Battery terminal
Adjustment remote control (J-9)
(6.5±0.1Vdc)
Stabilized power supply unit
Pattern generator
(IN)
(5.0±0.1Vdc)
Vectorscope
Color monitor
(OUT)
75Ω-terminated
Stabilized power supply unit

Fig. 3-3.

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3-2-2. Caution

1) Setting of switches
Unless otherwise specified, set the switches to the following position for making adjustments.
   1. CAMERA/VTR/POWER switch (S509 on FK-47 board)
......CAMERA
   2. STANDBY switch (S701 on SW-168 board)
......STANDBY
   3. AUTO LOCK switch (S217 on FD-44 board)
......OFF
   4. WHITE BALANCE button (S209 on FD-44 board)
......INDOOR mode ("☼" indication appears on EVF.)
   5. EXPOSURE button (S211 on FD-44 board)
......NORMAL
   6. SHUTTER SPEED button (S215 on FD-44 board)
......NORMAL mode (No indications of "100" "2000", etc. appear on EVF.)

2) Adjustment order
As a rule, adjust in described order.

3) Objects
   1. Color bar chart (standard picture frame)
When making Adjustments by the use of a color bar chart, adjust the picture frame as shown in Fig. 3-4. (Standard picture frame)

Color Bar Chart Standard Picture Frame

☆ Basically, adjust the color bar chart standard picture frame with the under-scanning monitor as shown in Fig. a.

1) Place a black window with the horizontal width same as that of a color bar pattern, respectively on left and right sides of the screen. (A=B)
2) Put together lower ends of the color pattern and under-scanning monitor in the vertical direction.

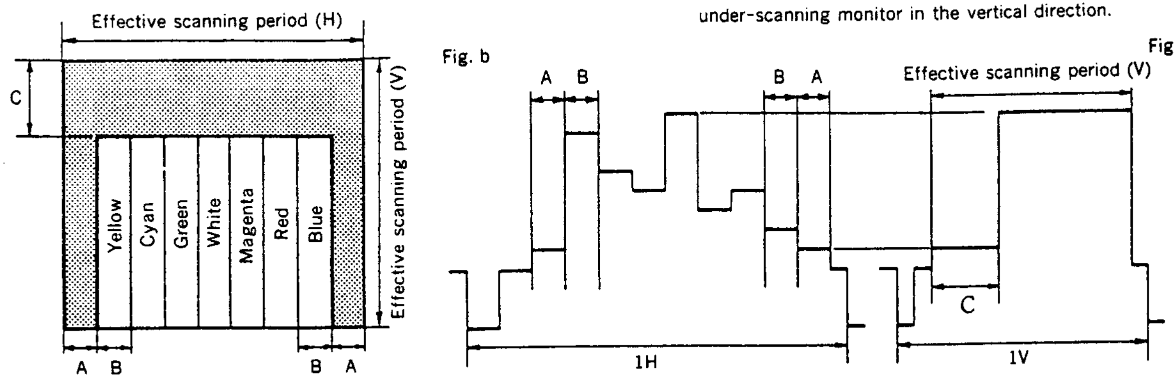


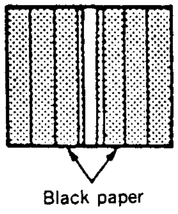
Fig. a
Effective scanning period (H)
C
Yellow
Cyan
Green
White
Magenta
Red
Blue
Effective scanning period (V)
A B
B A
Fig. b
A B
B A
1H
Fig. c
Effective scanning period (V)
C
1V

●To photograph the color bar chart standard picture frame shown in Fig. a. adjust Output Y (CN307① on VC-86 board) as shown in Fig. b and c.

Fig. 3-4.

   2. All white pattern
Remove a color bar chart from the pattern box and set the zoom lever fully to the TELE side (68mm).
   3. High luminance pattern
Prepare a high luminance pattern as shown in Fig. 3-5 and adjust the picture frame as shown in Fig. 3-6.
   4. Siemens star (J-6080-875-A)
orient a camera to have the siemens star center coincide with the monitor screen center on a monitor TV screen.

High luminance pattern


Black paper

Cover a color bar chart with black paper, except half the width of its white stripe. Then shoot the chart in this state.

Fig. 3-5.

High luminance pattern

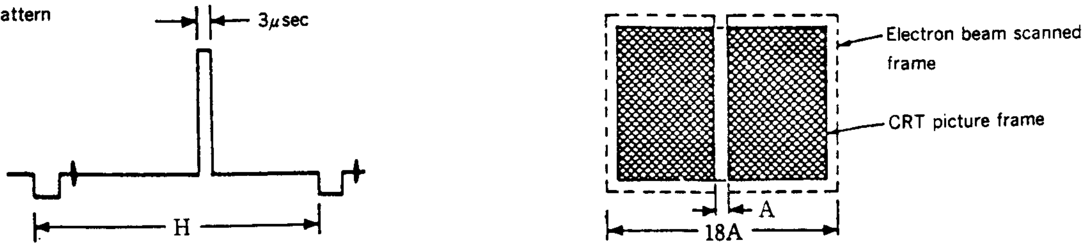

3μsec
H
Electron beam scanned frame
CRT picture frame
A
18A

Fig. a (camera output waveform of CPA pin Ⓐ8 on VC-86 board)

Fig. b (Picture of monitor TV screen)

By operating the camera zooming and orientation have the Fig. a output waveform output and the Fig. b monitor TV image displayed.

Fig. 3-6.

3-2-3. Adjustment Remote Control

In the camera block, the EVR (Electronic Variable Resistor) is used as an adjustment element in place of a conventional semi-fixed resistor. The EVR is controlled by the EVR/AWB microcomputer (VC-86 board IC501). This microcomputer reads the data written in the non-volatile memory inside the microcomputer and sends it to the EVR. The EVR generates an adjustment voltage by D-A conversion of this data (8 bits per one adjustment point).

To adjust, the camera block, therefore, it is necessary to rewrite the adjustment data written in the non-volatile memory. The adjustment remote control is used for this purpose. The adjustment remote control performs bidirectional communications with the microcomputer in the camera block through a remote control signal line (LANC). UP/DOWN commands for adjustment page, address and data are sent from the adjustment remote control to the microcomputer in the camera block. Sent from the microcomputer in the camera block to the adjustment remote control are the adjustment page, address and data.

Note : The microcomputer IC in the adjustment remote controller except for new microcomputer (UPD7503G-C56-12) dose not allow the page selecting. Replace with the new microcomputer (8-759-148-35) in such a case.

1. Using the Adjustment Remote Control

1) Connect the adjustment remote control to the REMOTE terminal (SW-168 board J701).
(Shift the HOLD switch of the adjustment remote control to the HOLD position (SERVICE position).)

2) Turn on the power for the main unit.

3) If the connection is correct, the following is displayed on the adjustment remote control LCD. (The adjustment data varies from one set to another.)

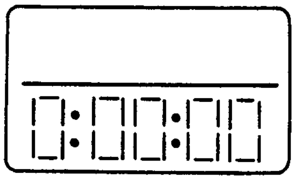


Fig. 3-7. (a)

4) Specify your desired adjustment page by the adjustment remote control.
Pressing the EDIT SEARCH (+) increments the adjustment page. Pressing the EDIT SEARCH (—) decrements it. The adjustment page is shown in the hexadecimal numbers and there are 16 of them from 1 to F. The CAMERA adjustment page is page F and Pressing the EDIT SEARCH (—) buttom one push.

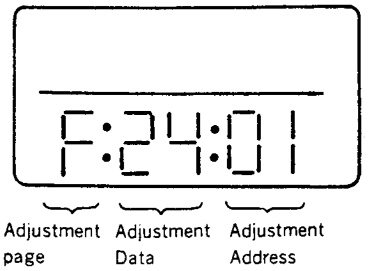


Fig. 3-7. (b)

5) Specify your desired adjustment address by the adjustment remote control. Pressing the FF (▶▶) button increments the adjustment address, and pressing the REW (◀◀) button decrements it.
(The adjustment address is shown in the decimal number and there are 256 of them from 00 to FF. The adjustment address corresponds to the output terminal of the EVR (IC301 on the VC-86 board, IC504 on the VC-86 board, and IC004 of the MX-10 board). Refer to Table 3-3 for adjustment of each address.)

6) Make adjustment by increasing/decreasing the adjustment data.
Pressing the PLAY (▶) button increases the adjustment data, and pressing the STOP (■) button decreases it.

- The adjustment data is shown in the hexadecimal number and assumes 256 kinds of values ranging from 00 to FF.

Hexadecimal No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Indication of LCD	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal converted value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 3-1.

- The adjustment data corresponds to the output voltage of the EVR (IC301 on the VC-86 board, IC504 on the VC-86 board, and IC004 on the MX-10 board) as follows:

(MX-10 board IC004 : 2.0 ⟷ 5.0 Vdc
VC-86 board IC301 : 0 ⟷ 5.0Vdc
VC-86 board IC504 : 1.0 ⟷ 3.5Vdc)

7) Change the adjustment address with the FF (▶▶) or REW (◀◀) button in order to store the adjustment data into the non-volatile memory built in the EVR/AWB microcomputer (VC-86 board IC501).
(If this operation is omitted, new adjustment data will not be stored into the non-volatile memory.)

8) There is a function provided to make note of the last error cuased by the COUNTER RESET button during operation of the set even if the power is turned off. This LAST MEMO EMERGENCY (last error) can be cleared.

2. Cautions for Using the Adjustment Remote Control

Erroneous operation of the adjustment remote control may delete correct adjustment data. To avoid this, it is recommended to make note of all the adjustment data before adjustment and of new adjustment data every time adjustment of one item is completed.

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3. List of Adjustment Addresses

Use the adjustment page F for the camera part adjustment of this unit.

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
01	MX-10 board IC004 pin ⑱	R CONT	Auto white balance adjustment	
02	MX-10 board IC004 pin ⑲	B CONT		
03	MX-10 board IC004 pin ②	C_1 GAIN	Matrix (3) C_1 gain adjustment	
04	MX-10 board IC004 pin ③	B GAIN	Pre-white balance adjustment	
05	MX-10 board IC004 pin ④	R GAIN		
06	MX-10 board IC004 pin ⑤	Y_2 GAIN	Matrix adjustment (2) Y_2 gain adjustment	
07	MX-10 board IC004 pin ⑥	Y_1 GAIN	Matrix adjustment (1) Y_1 gain adjustment	
08	MX-10 board IC004 pin ⑦	Y_H GAIN	Y_H level adjustment	
09	MX-10 board IC004 pin ⑧	R-Y GAIN	Color reproducibility adjustment	
0A	MX-10 board IC004 pin ⑨	B-Y GAIN		
0B	MX-10 board IC004 pin ⑫	R-Y HUE		
0C	MX-10 board IC004 pin ⑬	B-Y HUE		
0D	VC-86 board IC301 pin ⑱	SHP LEVEL	H aperture Adjustment	
0E	VC-86 board IC301 pin ⑲	Y LEVEL	White clip, Y level adjustments	
0F	VC-86 board IC301 pin ②	VAP GAIN	Matrix adjustment	
10	VC-86 board IC301 pin ③	SET UP	Set up adjustment	
11	VC-86 board IC301 pin ④	C LEVEL	Chroma level adjustment	
12	VC-86 board IC301 pin ⑤	V SUB CONT	V SUB adjustment	
13	VC-86 board IC301 pin ⑥	PG CONT	PG CONT adjustment	
14	VC-86 board IC301 pin ⑦	$Y\gamma$ CONT		
15	VC-86 board IC301 pin ⑧	WHITE CLIP	White clip adjustment	
16	VC-86 board IC301 pin ⑨	SYNC LEVEL	Sync level adjustment	
17	VC-86 board IC301 pin ⑫	BURST LEVEL	Burst level adjustment	
18	VC-86 board IC301 pin ⑬	MAX GAIN	Set up, Max gain adjustments	
19	VC-86 board IC504 pin ⑱	IRIS REF	Iris adjustment	
1A	VC-86 board IC504 pin ⑲	AGC REF	AGC adjustment	
1B	VC-86 board IC504 pin ②	HALL GAIN	Hall adjustment	
1C	VC-86 board IC504 pin ③	HALL OFFSET		
1D	VC-86 board IC504 pin ④	FADER LEVEL		
1E	VC-86 board IC504 pin ⑤	AE OFFSET	AE offset adjustment	
1F	VC-86 board IC504 pin ⑥	FADER CONT	Fader level adjustment	
20	VC-86 board IC504 pin ⑦	FOCUS SPEED		
21	VC-86 board IC504 pin ⑧	ZOOM SPEED		
22	VC-86 board IC504 pin ⑨	M IRIS CONT	Not used	
23	VC-86 board IC504 pin ⑫	M AGC CONT		
24	VC-86 board IC504 pin ⑬	—		

Table 3-2 (1).

Adjust-ment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
25		IN OUT		
26		M12-THR		
27		KATAMUKI		
28		FA-WM		
29		FA-BM		
2A		FH-WM		
2B		FH-BM		
2C		FA-SMH		
2D		FA-SML		
2E		FH-SMH		
2F		FH-SML		
30		LOW-F-SPEED		
31		MAN-F-SPEED		
32		STEP-A		
33		END-SENS-V		
34		ZOOM-POSI 1		
35		ZOOM-POSI 2		
36		ZOOM-POSI 3		
37		ZOOM-POSI 4		
38		ZOOM-POSI 5		
39		FOCUS-POSI 1		
3A		SEARCH-V		
3B		BACK RUSH 2		
3C		BACK RUSH MODE 3		
3D		ZOOM-TAN-MASK		
3E		ZOOM-END-V		
3F		ZOOM-MODOSI		
40		IRIS F1.7		
41		IRIS F2		
42		IRIS F2.4		
43		IRIS F2.8		
44		IRIS F3.4		
45		IRIS F4		
46		IRIS F4.8		

Table 3-2 (2).

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Adjust-ment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
47		IRIS F5.6		
48		IRIS F6.8		
49		IRIS F8		
4A		IRIS F9.6		
4B		IRIS F11		
4C		IRIS F14		
4D		IRIS F16		
4E		MODE 5 THR 3		
4F		FH-NG-COUNT		
50		TYUU WAKU		
51		YOGIRI-OUT		
52		MODE 5 THR 20 OUT		
53		AF IRIS IN OUT		
54		MACRO TIME OUT H		
55		MACRO TIME OUT L		
56		MACRO SEARCH		
57		SEISHI		
58		ZOOM-SPEED 1		
59		ZOOM-SPEED 2		
5A		ZOOM-SPEED 3		
5B		ZOOM-SPEED 4		
5C		—		
5D		—		
5E		—		
5F		—		
60		IRIS REF-NOR	Standard AE level, Program AE level setting	
61		IRIS REF-PO		
62		IRIS REF-SP		
63		IRIS DATA 1	IRIS manual data adjustment	
64		GAIN-REF	Manual gain data adjustment	
65		GAIN-MAX		
66		EMG-AGC	Warning display level setting	
67		EMG-AGC-HYS		
68		EMG-AE		
69		EMG-AE HYS-H		

Table 3-2 (3).

Adjust-ment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
6A		————		
6B		MAXSHUT-PO (H)		
6C		MAXSHUT-PO (L)		
6D		MAXSHUT-SP (H)		
6E		MAXSHUT-SP (L)		
6F		REF-WIDTH		
70		————		
71		SHUT-MULTI (H)		
72		————		
73		SHUT-COUNT 1		
74		SHUT STEP-MULTI		
75		IRIS OPEN		
76		REF-TURBO		
77		————		
78		TURBO-WIDTH (H)		
79		————		
7A		TURBO-TR (H)		
7B		————		
7C		SHUT-COUNT 2		
7D		SHUT-COUNT 3		
7E		————		
7F		————		
80		USER R-Y GAIN		
81		USER B-Y GAIN		
82		USER B-Y HUE		
83		USER R-Y HUE		
84		USER SHP LEVEL		
85		USER Y LEVEL		
86		————		
87		————		
88		————		
89		————		
8A		————		
8B		————		
8C		————		

Table 3-2 (4).

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Adjust-ment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
8D		———		
8E		———		
8F		———		
90		R3200 MSB		
91		R3200 LSB		
92		B3200 MSB		
93		B3200 LSB		
94		G3200 MSB		
95		G3200 LSB		
96		SHUTTER IN	Shutter IN/OUT adjustment	
97		SHUTTER OUT		
98		IRIS IN		
99		IRIS OUT		
9A		———		
9B		———		
9C		———		
9D		———		
9E		———		
9F		———		
A0		———		
A1		———		
A2		———		
A3		———		
A4		———		
A5		———		
A6		———		
A7		———		
A8		———		
A9		———		
AA		———		
AB		———		
AC		BTM SLP R		
AD		BTM SLP B		
AE		MDL SLP R		
AF		MDL SLP B		

Table 3-2 (5).

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
B0		TOP SLP R		
B1		TOP SLP B		
B2		KEIKO R		
B3		KEIKO B		
B4		BTM UP		
B5		BTM DWN		
B6		MDL UP		
B7		MDL DWN		
B8		TOP UP		
B9		TOP DWN		
BA		KEIKO		
BB		KEIKO DWN		
BC		R TOP LMT		
BD		R DWN LMT		
BE		B TOP LMT		
BF		B IN TOP		
C0		B IN MAX		
C1		B OUT MIN		
C2		B OUT DWN		
C3		B DWN LMT		
C4		LL LMT		
C5		TM DIVID		
C6		BM DIVID		
C7		DELAY TM		
C8		FAST TM		
C9		OUT HYS OFF		
CA		OUT B HYS		
CB		———		
CC		———		
CD		———		
CE		———		
CF		———		
D0		SYSTEM	NTSC/PAL select	
D1		MODE W01		
D2		MODE W11		

Table 3-2 (6).

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<table>
<tr><th>Adjust-ment Address</th><th>Adjustment Voltage Output Terminal</th><th>Adjustment Item</th><th>Remarks</th><th>Memo Column</th></tr>
<tr><td>D3</td><td></td><td>MODE W21</td><td></td><td></td></tr>
<tr><td>D4</td><td></td><td>MODE W31</td><td></td><td></td></tr>
<tr><td>D5</td><td></td><td>MODE W41</td><td></td><td></td></tr>
<tr><td>D6</td><td></td><td>MODE W02</td><td></td><td></td></tr>
<tr><td>D7</td><td></td><td>MODE W12</td><td></td><td></td></tr>
<tr><td>D8</td><td></td><td>MODE W22</td><td></td><td></td></tr>
<tr><td>D9</td><td></td><td>MODE W32</td><td></td><td></td></tr>
<tr><td>DA</td><td></td><td>MODE W42</td><td></td><td></td></tr>
<tr><td>DB</td><td></td><td>MODE W03</td><td></td><td></td></tr>
<tr><td>DC</td><td></td><td>MODE W13</td><td></td><td></td></tr>
<tr><td>DD</td><td></td><td>MODE W23</td><td></td><td></td></tr>
<tr><td>DE</td><td></td><td>MODE W33</td><td></td><td></td></tr>
<tr><td>DF</td><td></td><td>MODE W43</td><td></td><td></td></tr>
<tr><td>E0</td><td></td><td>DISPLAY MODE</td><td>The following adjustment mode is selected by changing the adjustment data.
<table>
<tr><th>Adjustment data.</th><th>Adjustment Mode</th></tr>
<tr><td>00</td><td>DISPLAY MODE
R, B, CONT</td></tr>
<tr><td>01</td><td>NEW R, B</td></tr>
<tr><td>02</td><td>R RATIO</td></tr>
<tr><td>03</td><td>B RATIO</td></tr>
<tr><td>04</td><td>R GAIN</td></tr>
<tr><td>05</td><td>B GAIN</td></tr>
<tr><td>06</td><td>RM DATA</td></tr>
<tr><td>07</td><td>GM DATA</td></tr>
<tr><td>08</td><td>BM DATA</td></tr>
<tr><td>09</td><td>R, B RATIO</td></tr>
<tr><td>0A</td><td>WHIT R, B</td></tr>
<tr><td>0B</td><td>R DATA</td></tr>
<tr><td>0C</td><td>G DATA</td></tr>
<tr><td>0D</td><td>B DATA</td></tr>
<tr><td>0E</td><td>R, B AIM</td></tr>
<tr><td>0F</td><td>ERROR</td></tr>
<tr><td>FF</td><td>R, B AWB</td></tr>
<tr><td>11</td><td>HALL DATA,
SHUTTER DATA</td></tr>
</table></td><td>00</td></tr>
<tr><td>E1</td><td></td><td>————</td><td></td><td></td></tr>
<tr><td>E2</td><td></td><td>————</td><td></td><td></td></tr>
</table>

Table 3-2 (7).

<table>
<tr><th>Adjust-ment Address</th><th>Adjustment Voltage Output Terminal</th><th>Adjustment Item</th><th>Remarks</th><th>Memo Column</th></tr>
<tr><td>E3</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E4</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E5</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E6</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E7</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E8</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>E9</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>EA</td><td></td><td>—</td><td></td><td></td></tr>
<tr><td>EB</td><td></td><td>MODE</td><td>The following adjustment mode is selected by changing the adjustment data.
<table>
<tr><th>Adjustment Data</th><th>Adjustment Mode</th></tr>
<tr><td>00</td><td>NORMAL</td></tr>
<tr><td>01</td><td>F-HANTING</td></tr>
<tr><td>03</td><td>ZOOM-POSI</td></tr>
<tr><td>05</td><td>IRIS-POSI</td></tr>
<tr><td>0B</td><td>AGC-CONT</td></tr>
<tr><td>0D</td><td>FOCUS-POSI</td></tr>
<tr><td>11</td><td>SHUTTER IN/OUT</td></tr>
<tr><td>13</td><td>AE LEVEL</td></tr>
<tr><td>ED</td><td>FILTER-FHM</td></tr>
<tr><td>EF</td><td>FILTER-FAM</td></tr>
<tr><td>F1</td><td>FILTER-SFH L</td></tr>
<tr><td>F3</td><td>FILTER-SFH H</td></tr>
<tr><td>F5</td><td>FILTER-SFA L</td></tr>
<tr><td>F7</td><td>FILTER-SFA H</td></tr>
<tr><td>F9</td><td>FILTER-FA L</td></tr>
<tr><td>FB</td><td>FILTER-FH L</td></tr>
<tr><td>FD</td><td>FILTER-FA H</td></tr>
<tr><td>FF</td><td>FILTER-FH H</td></tr>
</table></td><td></td></tr>
<tr><td>EC</td><td></td><td>AWB MODE 3</td><td></td><td></td></tr>
<tr><td>ED</td><td></td><td>AWB MODE 2</td><td></td><td></td></tr>
<tr><td>EE</td><td></td><td>AWB MODE 1</td><td>The following auto white balance adjustment mode is selected by changing the adjustment data.
<table>
<tr><th>Adjustment Data</th><th>Adjustment Mode</th></tr>
<tr><td>00</td><td>AWB MODE 1</td></tr>
<tr><td>10</td><td>WB DIRECT</td></tr>
<tr><td>F0</td><td>WB FREE</td></tr>
<tr><td>01</td><td>3200k Data fetch 1</td></tr>
<tr><td>23</td><td>3200k Data fetch 2</td></tr>
<tr><td>D0</td><td>INITIAL SETTING ADJUSTMENT</td></tr>
</table></td><td></td></tr>
</table>

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Table 3-2 (8).

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Memo Column
EF		CAM ALON		
F0		————		
F1		————		
F2		————		
F3		————		
F4		————		
F5		————		
F6		————		
F7		————		
F8		————		
F9		————		
FA		————		
FB		————		
FC		————		
FD		————		
FE		————		
FF		————		

Table 3-2 (9).

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3-2-4. Checkpoint Array

Most measurement points for adjustment of the camera block are concentrated on the checkpoint array of the VC-86 board. Solder a short lead wire, etc. to the terminal required for adjustment and connect an oscilloscope. Table 3-3 shows the terminal numbers and signal names of the checkpoint array.

Note: The CPA connector jig allows you to connect an oscilloscope easily.

Terminal No.	Signal Name	Terminal No.	Signal Name
A1	N.C	B1	N.C
A2	PG CONT	B2	N.C
A3	N.C	B3	Y LPF OUT
A4	N.C	B4	V SUB
A5	VAP OUT	B5	VAP SLICE
A6	TP	B6	N.C
A7	WB-G	B7	Y_H GAIN
A8	CAM Y	B8	Y_2 GAIN
A9	YH	B9	N.C
A10	CAM C	B10	GND
A11	YH OUT 1	B11	IRIS OUT

Table 3-3.

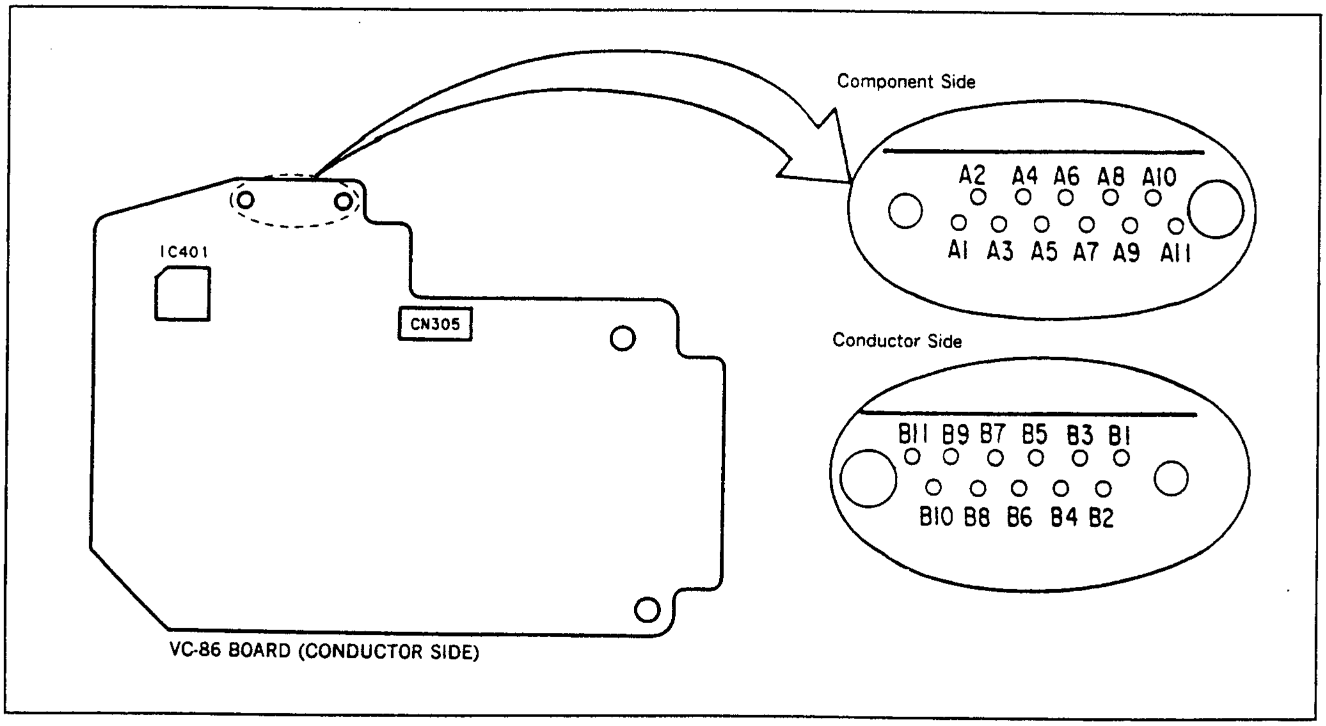
Component Side
A2 A4 A6 A8 A10
A1 A3 A5 A7 A9 A11
Conductor Side
B11 B9 B7 B5 B3 B1
B10 B8 B6 B4 B2
IC401
CN305
VC-86 BOARD (CONDUCTOR SIDE)

Fig. 3-8.

3-2-5. AF Microcomputer Data Reader Jig

The AF microcomputer data reader jig converts adjustment serial data outputted from the AF microcomputer (VC-86 board CN655) (different data are outputted depending on the adjustment mode, such as HALL (iris) state, focus state, focus motor speed, zoom ring position, etc.) into 2-digit hexadecimal numbers and indicates on the LED.

[Connection]

Connect as shown in the figure below :

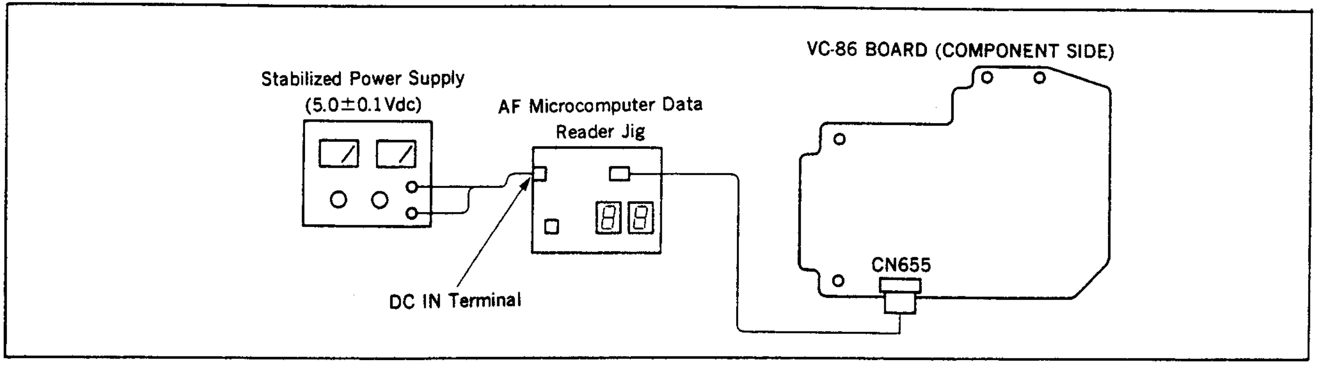
Stabilized Power Supply
(5.0±0.1Vdc)
AF Microcomputer Data Reader Jig
DC IN Terminal
VC-86 BOARD (COMPONENT SIDE)
CN655

Fig. 3-9.

3-2-6. Data Processing

In order to obtain adjustment data in some adjustment items, it is necessary to compute the display data (hexadecimal number) of the AF microcomputer data reader jig and adjustment remote control. In this case, convert the hexadecimal number into the decimal number before computation, convert its computed result back into the decimal number to assume it as the adjustment data. Table 3-4 shows a hexadecimal-decimal conversion table.

Hexadecimal — Decimal Conversion Table

Higher Digit of Hex. No. / Lower Digit of Hex. No.	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A(A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→ B(b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C(c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D(d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E(E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F(F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: Values in parentheses are those displayed on the AF microcomputer reader jig or adjustment remote control.

(Example) When the AF microcomputer reader jig or adjustment remote control displays "BD (bd);
Since the higher digit of the hexadecimal number is B (b) and its lower digit is D (d), the decimal number to be obtained is "189" at an intersecting point of ① and ② in the table above.

Table. 3-4.

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3-3. ADJUSTMENT OF CAMERA SYSTEM

- In principle, all adjustments must be made in accordance with Adjustment procedure.
- When replacing CCD imager, do not forget to adjust the camera system property.

3-3-1. Camera DC-DC Converter Voltage Check (VC-86 Board/CD-53 Board)

Measuring isntrument	Digital voltmeter
15V check	
Measurement point	CN101 pin ① (CD-53 Board)
Specified value	$15.0\pm0.2V_{DC}$
−9V check	
Measurement point	CN101 pin ② (CD-53 Board)
Specified value	$-9.00\pm0.15V_{DC}$
4.9V check	
Measurement point	CN101 pin ③ (CD-53 Board)
Specified value	$4.9\pm0.1V_{DC}$
CAM 4.9V check	
Measurement point	CN304 pin ④ (VC-86 Board)
Specified value	$4.9\pm0.1V_{DC}$

[Checking Method]

1) Each supply voltage must meet the specified value.

- **WIND ON/OFF**

This function is to turn off the ABL (Auto Back Light; Wind Pulse of the Center Point Photometry) when adjusting the camera part. All the adjustment to do was to input the SERVICE LANC to the page F when turning off the ABL in adjusting, however, you are informed that this unit has another procedure.

[Procedures]

1) Set the SERVICE LANC to the adjustment page 5. (The adjustment address has set to 00 and the adjustment data has set to 10.)
2) Set the adjustment data of the adjustment address 00 to 01. (The ABL is turned off.)
3) Set the adjustment address to 00 and the adjustment data to 10 when turning on the ABL.

Note: Turning off the power resets the ABL. turning on the power after that turns on the ABL. (The adjustment address 00 of the adjustment page 5 is set to the adjustment data 10.)

3-3-2. EVR Initial Setting of Adjustment Page F.

Set to the following initial settings of the adjustment data only when the CCD IMAGER was replaced.

Make initial setting of adjustment data when the EVR/AWB microcomputer is replaced.

(Pre-replacement microcomputer data will do.)

Adjustment Address	Adjustment Data Initial Value
0E (Y LEVEL)	9C
0F (VAP GAIN)	90
12 (VSUB CONT)	3A
13 (PG CONT)	5A
14 (Yγ CONT)	AE
15 (WHITE CLIP)	FF
18 (MAX GAIN)	E0
19 (IRIS REF)	4C
1F (FADER CONT)	00
40 (IRIS F1.7)	61
41 (IRIS F2)	7F
42 (IRIS F2.4)	93
43 (IRIS F2.8)	A3
44 (IRIS F3.4)	AE
45 (IRIS F4)	B7
46 (IRIS F4.8)	BD
47 (IRIS F5.6)	C2
48 (IRIS F6.8)	C5
49 (IRIS F8)	C8
4A (IRIS F9.6)	CA
4B (IRIS F11)	CD
4C (IRIS F14)	D0
4D (IRIS F16)	D4
58 (ZOOM-SPEED 1)	94
59 (ZOOM-SPEED 2)	55
5A (ZOOM-SPEED 3)	2B
5B (ZOOM-SPEED 4)	53
5C	00
5D	02
60 (IRIS REF NOR)	60
61 (IRIS REF PO)	60
62 (IRIS REF SP)	60
63 (IRIS DATA 1)	C2
64 (GAIN-REF)	30
65 (GAIN-MAX)	D0
66 (EMG AGC)	90
67 (EMG-AGC-HYS)	05

Adjustment Address	Adjustment Data Initial Value
68 (EMG-AE)	50
69 (EMG AE HYS-H)	10
6B (MAX SHUT-PO (H))	01
6C (MAX SHUT-PO (L))	00
6D (MAX SHUT-SP (H))	01
6E (MAX SHUT-SP (L))	18
6F (REF-WIDTH)	0C
70	00
71 (SHUT-MULTI (H))	40
73 (SHUT-COUNT 1)	06
74 (SHUT STEP-MULTI)	01
75 (IRIS-OPEN)	20
76 (REF-TURBO)	40
78 (TURBO-WIDTH)	0C
7A (TURBO-TR (H))	0C
7C (SHUT-COUNT 2)	02
7D (SHUT-COUNT 3)	02
80 (USER R-Y GAIN)	10
81 (USER B-Y GAIN)	0D
82 (USER B-Y HUE)	0D
83 (USER R-Y HUE)	0C
84 (USER SHP LEVEL)	0A
85 (USER Y LEVEL)	0C
96 (SHUTTER IN)	B1
97 (SHUTTER OUT)	8B
98 (IRIS IN)	A7
99 (IRIS OUT)	B7
AC (BTM SLP R)	48
AD (BTM SLP B)	78
AE (MDL SLP R)	60
AF (MDL SLP B)	40
B0 (TOP SLP R)	66
B1 (TOP SLP B)	18
B2 (KEIKO R)	66
B3 (KEIKO B)	18
B4 (BTM UP)	C2
B5 (BTM DWN)	A0
B6 (MDL UP)	AD
B7 (MDL DWN)	96
B8 (TOP UP)	78
B9 (TOP DWN)	60
BA (KEIKO)	6C

Adjustment Address	Adjustment Data Initial Value
BB (KEIKO DWN)	60
BC (R TOP LMT)	6E
BD (R DWN LMT)	21
BE (B TOP LMT)	8C
BF (B IN TOP)	65
C0 (B IN MAX)	5C
C1 (B OUT MIN)	5C
C2 (B OUT DOWN)	4A
C3 (B DOWN LMT)	1B
C4 (LL LMT)	06
C5 (TM DIVID)	5C
C6 (BM DIVID)	39
C7 (DELAY TM)	08
C8 (FAST TM)	40
C9 (OUT HYS OFF)	0E
CA (OUT B HYS)	07
D0 (SYSTEM)	00
EC (AWB MODE 3)	01
ED (AWB MODE 2)	00
EE (AWB MODE 1)	00
EF (CAM ALON)	80

Table. 3-5.

[Adjustment Method]

1) Set the adjustment page F with the adjustment remote control.
2) Set the adjustment data for each adjustment address to the initial value with the adjustment remote control.
3) Change the adjustment address in order to memorize the last adjustment data.

3-3-3. Prime Oscillation Adjustment (CD-53 Board)

Object	Color bar chart standard picture frame
Measurement point	DT-77 board pin ③ (CL143)
Measuring instrument	Frequency counter
Adjustment element	CT122
Spehified value	14318181±71Hz

Note : Connect the frequency counter through a buffer amplifier (Oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 14318181±71Hz with CT122.

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3-3-4. Flange Back Adjustment

Object	Siemens star (Position located 2 meters forward from the front of lens)
Measurement point	Checked with a monitor TV.
Measuring instrument	
Adjustment element	Adjust screw
Tools	Screw driver

[Adjustment Method]

1) Set AUTO LOCK switch (FD-44 board S217) to "Manual" position (Lower side.)
2) Set the siemens star at the position 2 meters forward from the front of lens.
3) Adjust the position of camera block in such a way that the center of siemens star displayed on the monitor screen coincides with the center of monitor screen.
4) Make sure that the lens zoom lever smoothly moves to the extreme end of WIDE (8.5mm) and the extreme end of TELE (68mm) and then set the lever at the extreme end of WIDE (make sure that the zooming operation is functioning on the monitor screen at this time).
5) Press the PROGRAM AE button. (FD-44 board S210)
6) Press the EXPOSURE button (FD-44 board S211).
7) Open the IRIS by operating the CONTROL switch (FD-44 board S210).
8) The end surface of "∞" side of stopper rubber should be set on the center of the 3 lines marked on the main lens cylinder (Refer to Fig. 3-10).

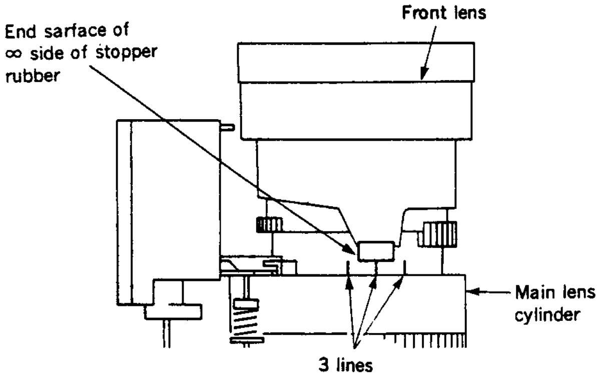

Fig. 3-10.

9) Loosen the setscrew (Refer to Fig. 3-11).
10) Insert a minus screw driver through the hole on rear lens cylinder and slightly turn the master lens frame with the edge of screw driver.
11) By turning the adjust screw, set the focus until the chart contrust becomes maximum (keep the setscrew loose at this time).
12) Readjust the focus by turning the focus ring.
13) Make sure that the ends of ∞ side of stopper rubber are kept within the range of 3 lines marked on the main lens cylinder (If not within the range, repeat the above 8) and 9)).
14) While bolding the adjust screw, thus preventing it from turning, tighten the setscrew [If the position deviates, repeat the process starting from 6)]
15) Repeat the above 10) and 11) and check.

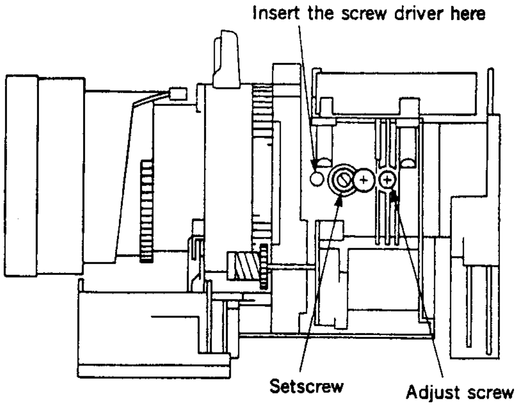

Fig. 3-11.

3-3-5. AF Measurement Distance Adjustment

Object	AF measurement adjust chart (Refer to Fig. 3-12)
Measurement point	Check with monitor TV.
Measuring instrument	Check with monitor TV.
Adjustment element	Measured distance adjust screw
Tools	Hexagonal wrench (1.25mm)

[Adjustment Method]

1) Set the chart at 2 meters forward from the front of lens.
2) Set the lens zoom lever on the TELE terminal and set the center of monitor on the center of chart.
3) Insert the hexagonal wrench into the hole located on the lower side of unit and set the focus by turning AF adjust screw (Refer to Fig. 3-13).
4) Remove the focus ring by turning it with your hand ensuring no overrunning of focus, that is, the focus is not deviated after it is properly set once when the ring is turned to ∞ side and hand is released or when the ring is turned to 1.2m side and the hand is released.
5) When the focus overruns in the above 4), repeat the above 3) and 4).
6) Close the AF adjust hole of cabinet.

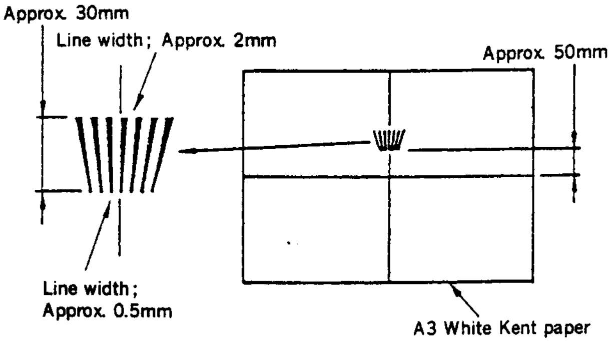

Fig. 3-12.

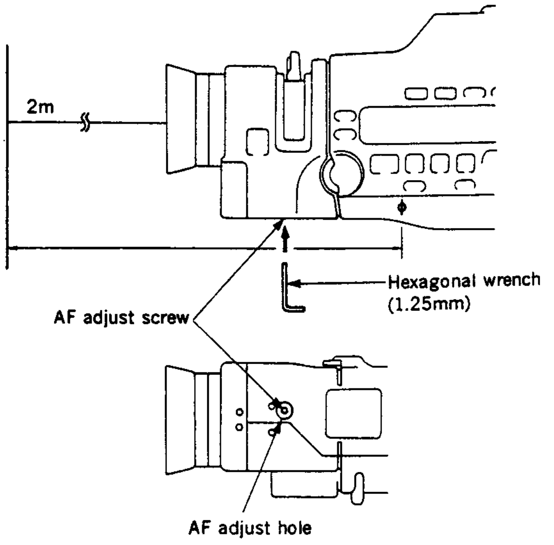

Fig. 3-13.

3-3-6. Sync. Level Adjustment (VC-86 Board)

Object	All black (Cover the lens with a black cap.)
Measurement point	CN307 pin① (Y OUT) or checkpoint array pin(A8)(CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	16 (SYNC LEVEL)
Specified value	145±5mV

[Adjustment Method]

1) Select the adjustment page F and the adjustment address 16 with the adjustment remote control.
2) Change the adjustment data with the adjustment remote control to adjust the sync. level to 145±5mV.
3) Change the adjustment address in order to store the adjustment data.

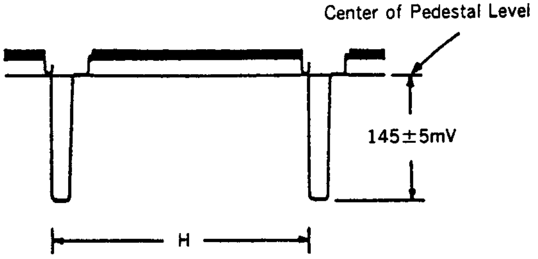

Fig. 3-14.

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3-3-7. Setup Adjustment (VC-86 Board)

Object	All black (Cover the lens with a black cap.)
Measurement point	CN307 pin① (Y OUT) or checkpoint array pin (A8) (CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	10 (SET UP) 18 (MAX GAIN)
Specified value	15±5mV

[Adjustment Method]

1) Select the adjustment page F with the adjustment remote control.
2) Select the adjustment address 18 with the adjustment remote control, make note of the adjustment data of this address (data F), and then, set the adjustment data to 00.
3) Select the adjustment address 10 with the adjustment remote control.
4) Change the adjustment data with the adjustment remote control to adjust the setup level to 15±5mV.
5) Select the adjustment address 18 and enter to the adjustment data F.
6) Change the adjustment address in order to store the adjustment data.

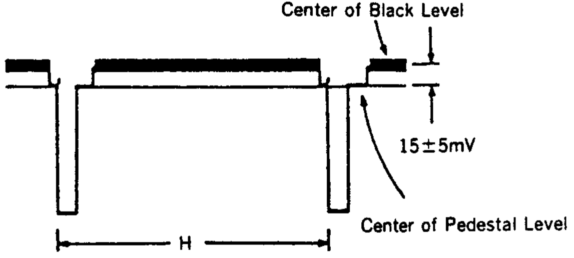
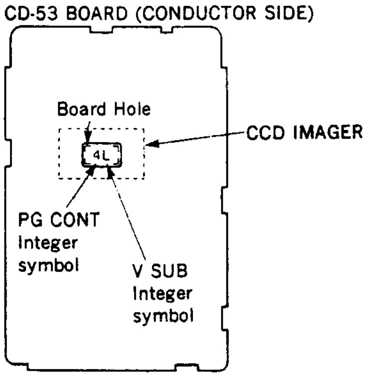


Fig. 3-15.

3-3-8. PG CONT/V SUB Adjustment (CD-53/VC-86 Boards)

Note : PG CONT specified voltage and V SUB specified volatage are indicated by the two digits on CCD imager.



- PG CONT

Integer symbol	Voltage (V)
0	0.5
1	1.0
2	1.5
3	2.0
4	2.5
5	3.0
6	3.5
7	4.0

- V SUB

Integer symbol	Voltage (V)	Integer symbol	Voltage (V)	Integer symbol	Voltage (V)
A	7.0	J	11.0	S	15.0
B	7.5	K	11.5	T	15.5
C	8.0	L	12.0	U	16.0
D	8.5	M	12.5	V	16.5
E	9.0	N	13.0	W	17.0
F	9.5	P	13.5	X	17.5
G	10.0	Q	14.0	Y	18.0
H	10.5	R	14.5	Z	18.5

Example : For 「4L」 display,
•PG CONT=2.5V
•V SUB=12.0V

Fig. 3-16.

A. PG CONT Adjustment

Object	Not used
Measurement point	Checkpoint array pin (A2) (PG CONT)
Measuring instrument	Digital voltmeter
Adjustment page	F
Adjustment address	13 (PG CONT)
Specified value	(CCD imager specified voltage) $\pm 0.1V_{dc}$

[Adjustment Method]

1) Set the adjustment page F and the adjustment address 13 with the adjustment remote control.
2) Change the adjustment data to be (CCD imager specified voltage) ± 0.1Vdc with the adjustment remote control.
3) Change the adjustment address to store the adjustment data.

B. V SUB Adjustment

Object	Not used
Measurement point	Checkpoint array pin ⒷⒹ(B4)(V SUB)
Measuring instrument	Digital voltmeter
Adjustment page	F
Adjustment address	12 (V SUB)
Specified value	(CCD imager specified voltage) ±3%

[Adjustment Method]

1) Set the adjustment page F and the adjustment address 12 with the adjustment remote control.
2) Change the adjustment data to be (CCD imager specified voltage) ±3% with the adjustment remote control.
3) Change the adjustment address to store the adjustment data.

3-3-9. Iris Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Filter	ND filter 0.5 (0.4+0.1)
Measurement point	Checkpoint array pin (B11) (IRIS OUT)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	19 (IRIS)
Specified value	150±10 mV

[Adjustment Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control. (WIND OFF).
2) Select the adjustment page F and the adjustment address 19 with the adjustment remote control.
3) With no ND filter attached, change the adjustment data with the adjustment control to adjust the IRIS OUT signal level to 150±10 mV.
4) Attach the ND filter 0.5 (0.4+0.1) in front of the lens and check that the signal level changes smoothly.
5) Remove the ND filter and check that the signal level is 150±20 mV.
6) When the specified value is not met, repeat the steps 3) through 5).
7) Change the adjustment address in order to store the adjustment data.

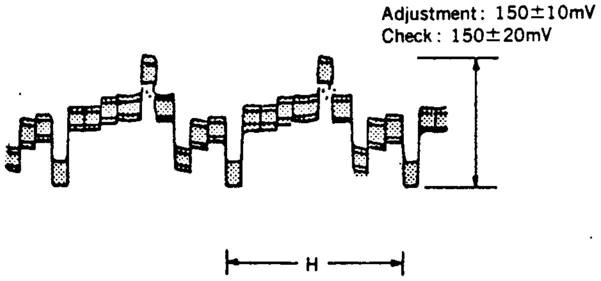


Fig. 3-17.

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3-3-10. Hall Adjustment (VC-86 Board)

Object	White pattern standard frame All black (Cover the lens with a black cap.)
Measurement point	CN801
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	1B (HALL GAIN) 1C (HALL OFFSET)
Specified value	White pattern imaging: C8±01 ALL black imaging: 03±02

[Adjustment Method]

1) Set the adjustment page F with the adjustment remote control.
2) Set the adjustment address EB and the adjustment data 05 with the adjustment remote control.
3) Set the adjustment address 1B with the adjustment remote control.
   Pick up the image of the all white pattern in the zoom position of the color bar standard frame, set the adjustment data C8±01.
   Cover the lens with a black cap, select all black imaging, and set the adjustment data 03±02.
4) Set the adjustment address 1C with the adjustment remote control.
   Pick up the image of the all white pattern in the zoom position of the color bar standard frame, set the adjustment data C8±01.
   Put the black cap on the lens, select all black imaging, and set the adjustment data 03±02.
5) Repeat steps 2) and 3) until the specifications are satisfied.
6) Set the adjustment address EB and the adjustment data 00 with the adjustment remote control.
7) Change the adjustment address is order to store the adjustment data.

3-3-11. AGC Adjustment (VC-86 Board)

Note : When there is much noise, measure by inserting 5.6kΩ resistance.

Object	Color bar chart standard picture frame
Measurement point	Checkpoint array pin (B3) (Y LPF OUT)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	1A (AGC)
Specified value	180±5 mV

[Adjustment Method]

1) Select the adjustment page 5 and the adjustment address 00, data 01 with the adjustment remote control.
2) Select the adjustment page F and the adjustment address 1A with the adjustment remote control.
3) Change the adjustment data with the adjustment remote control to set the Y (LPF) signal level to 180±5 mV.
4) Change the adjustment address in order to store the adjustment data.

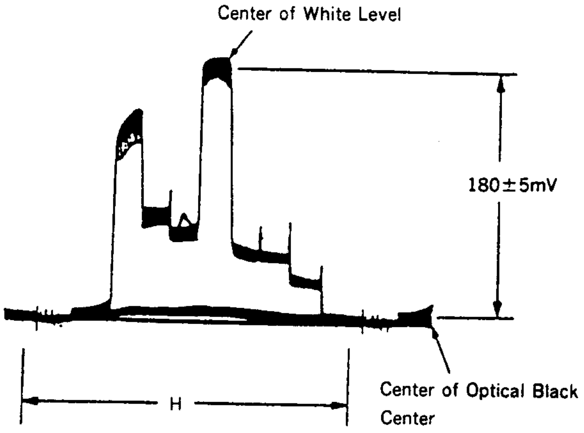

Fig. 3-18.

3-3-12. Manual Gain Data Adjustment (1) (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	64 (GAIN REF)

[Adjustment Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Select the adjustment page F and set the aijustment address EB, data OB with the adjustment remote control.
3) Store the value of the AF microcomputer data reader jig to the adjustment address 64.
4) Select the adjustment address EB and set the adjustment data 00 with the adjustment remote control.
5) Change the adjustment address in order to store the adjustment data.

3-3-13. Matrix Adjustment

(1) Y_1 Gain Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	Checkpoint array pin(A5)(VAP OUT)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	07 (Y_1 GAIN) 0F (VAP GAIN)
Specified value	$Y_0-Y_1=0\pm5$mV

[Preparation]

1) Short the checkpoint array pin(B8)(Y_2 Gain) and pin(B5) (VAP SLICE) with GND.

[Adjustment Method]

1) Select the adjustment page F with the adjustment remote control.
2) Select the adjustment address 0F and preset the adjustment data 00 with the adjustment remote control. (VAP GAIN : MAX)
3) Select the adjustment address 07 with the adjustment remote control.
4) Change the adjustment data and set the Y_0-Y_1 waveform to be a straight line. (There should not be difference.)
5) Change the adjustment address in order to store the adjustment data.
6) Open the checkpoint array pin(B8)and pin(B5).

Note : After the adjustment, be sure to adjust the matrix (2) Y_2 Gain Adjustment.

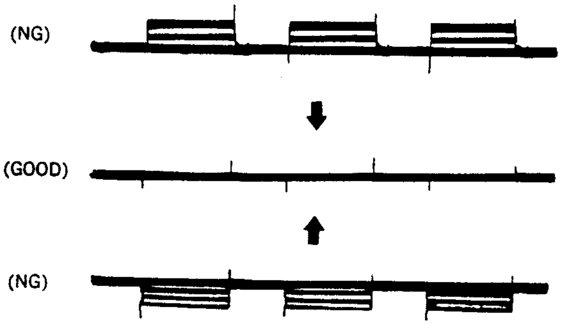

Fig. 3-19.

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(2) Y_2 Gain Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	Checkpoint array pinⒶ5(VAP OUT)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	06 (Y_2 GAIN) 0F (VAP GAIN)
Specified value	0±5mV

[Preparation]

1) Short the chickpoint array pinⒷ5(VAP SLICE) with GND.

[Adjustment Method]

1) Select the adjustment page F with the adjustment remote control.
2) Select the adjustment address 0F and preset the adjustment data 00 with the adjustment remote control. (VAP GAIN : MAX)
3) Select the adjustment address 06 with the adjustment remote control.
4) Change the adjustment data and set the $(Y_1 - \frac{Y_0+Y_2}{2})$ waveform to be a straight line. (There should not be difference.)
5) Select the adjustment address 0F and set the adjustment data 90 with the adjustment remote control.
6) Change the adjustment address in order to store the adjustment data.
7) Open the checkpoint array pinⒷ5.

Note : After the adjustment, be sure to adjust the matrix (3) C_1 Gain Adjustment.

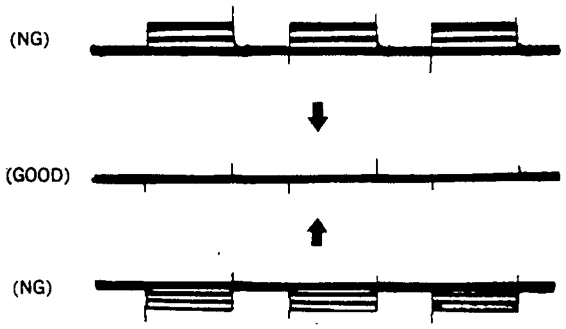

Fig. 3-20.

(3) C_1 Gain Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CH1 : MX-10 Board pin㉚ CH2 : MX-10 Board pin㉛
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	03 (C_1 GAIN)
Specified value	Minimize the divided bright point.

[Adjustment Method]

1) Select the adjustment page 5 and the adjustment address 00, data 01 with the adjustment remote control.
2) Select the adjustment page F and the adjustment address 03 with the adjustment remote control.
3) Change the adjustment data to coincide each color bright point.
4) Change the adjustment address in order to store the adjustment data.

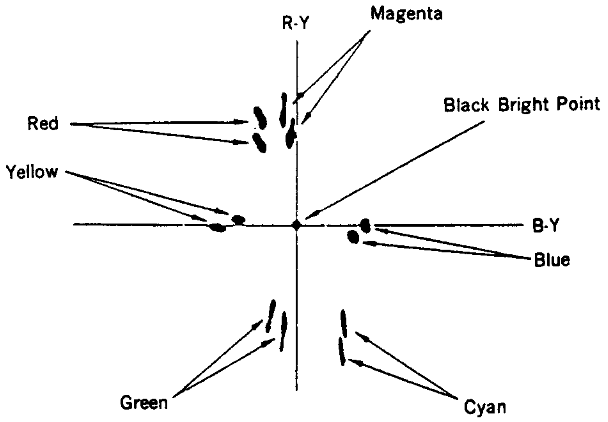

Fig. 3-21.

3-3-14. Y_H Level Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	Checkpoint array pin(A6)(TP)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	08 (Y_H GAIN)
Specified value	0±5mV

[Adjustment Method]

1) Select the adjustment page F and the adjustment address 08 with the adjustment remote control.
2) Change the adjustment data by the adjustment remote control in order that the output is a straght line. (There should not be difference : 0+5mV)
3) Change the adjustment address in order to store the adjustment data.

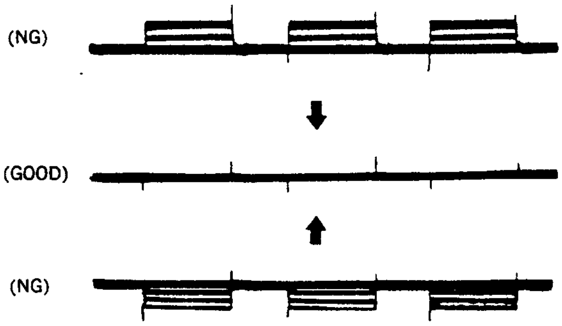

Fig. 3-22.

3-3-15. Chroma Level Adjustment (VC-86 Borad)

Object	Color bar chart standard picture frame
Measurement point	Checkpoint array pin (A7) (WB-G)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	11 (C LEVEL)
Specified value	320±20mV

[Adjustment Method]

1) Select the adjustment page 5 and the adjustment address 00, data 01 with the adjustment remote control.
2) Select the adjustment page F and the adjustment address 11 with the adjustment remote control.
3) Change the adjustment data with the adjustment remote control to adjust the white level to 320±20 mV.
4) Change the adjustment address in order to store the adjustment data.

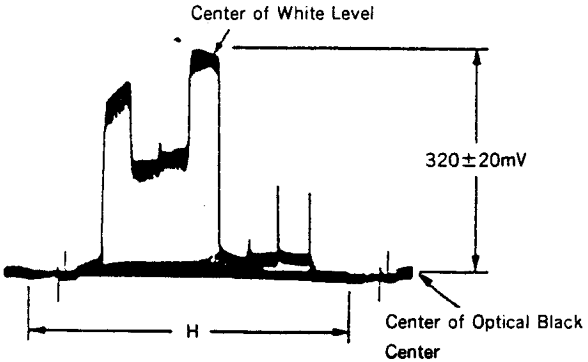

Fig. 3-23.

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3-3-16. Burst Level Adjustment (VC-86 Board)

Object	All black (Cover the lens with a black cap.)
Measurement point	CN307 pin ③ (C OUT) or checkpoint array pin (A10) (CAM C)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	17 (BURST LEVEL)
Specified value	140±5mVp-p

[Adjustment Method]

1) Select the adjustment page F and the adjustment address 17 with the adjustment remote control.
2) Change the adjustment data with the adjustment remote control to adjust the burst level to 140±5mVp-p.
3) Change the adjustment address in order to store the adjustment data.

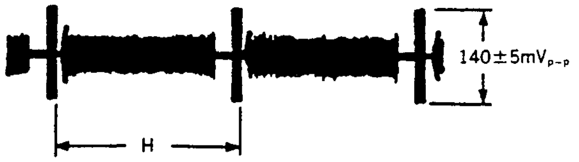


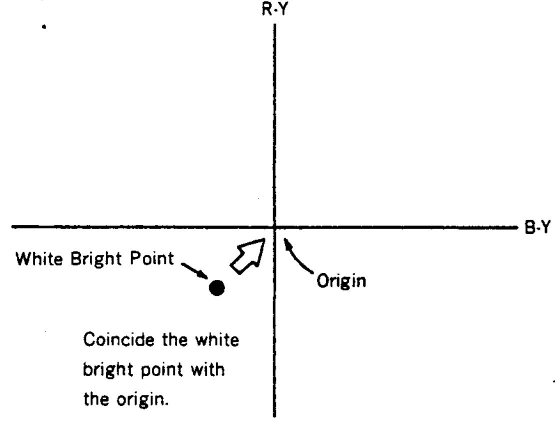
Fig. 3-24.

3-3-17. Pre-white Balance Adjustment

Object	All white pattern
Measurement point	VIDEO OUT terminal of the video block
Measuring instrument	Vectorscope
Adjustment page	F
Adjustment address	05 (R GAIN) 04 (B GAIN)
Specified value	The center of a white bright point must be within a circle of ϕ 1 mm centering around the origin

[Adjustment Method]

1) Maximize the gain of vectorscope.
2) Select the adjustment page F and the adjustment address 05 with the adjustment remote control.
3) Change the adjustment data with the adjustment remote control to coincide the white bright point with the origin.
4) Select the adjustment address 04.
5) Change the adjustment data to coincide the white bright point with the origin.
6) Repeat the steps 2) through 5).
7) Return the gain of vectorscope to CAL, and make sure that center of the bright point is located inside a circle of 1 mm diameter apart from the origin.
8) Change the adjustment address in order to store the adjustment data.



Coincide the white bright point with the origin.

Fig. 3-25.

3-3-18. Color Reproducibility Adjustment

Object	Color bar chart standard picture frame
Measurement point	VIDEO OUT terminal of the video block
Measuring instrument	Vectorscope
Adjustment page	F
Adjustment address	09 (R-Y GAIN) 0A (B-Y GAIN) 0B (R-Y HUE) 0C (B-Y HUE)
Specified value	All color bright points must be within a color reproduction frame.

Note: The Burst Level Adjustment and the Pre-white Balance Adjustment must have been completed.

[Adjustment Method]

1) Set the bright point of the burst to the position of 75% with the GAIN control of the vectorscope.
2) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
3) Select the adjustment page F with the adjustment remote control.
4) Change the adjustment data of each adjustment address with the adjustment remote control to collect all the color bright points within the color reproduction frame.
5) Change the adjustment address in order to store the adjustment data.

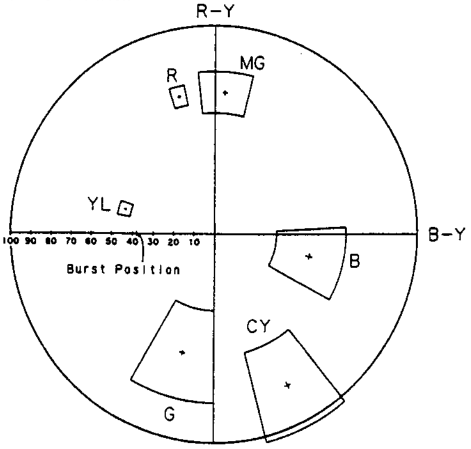


Fig. 3-26.

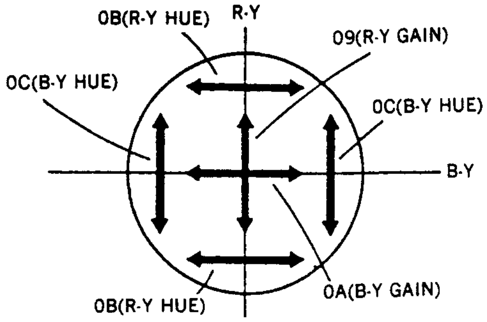


Fig. 3-27. Adjustment Addresses and Bright Point Moving Directions

3-3-19. White Clip Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN307 pin① (Y OUT) or checkpoint array pin(A8)(CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	15 (WC) 0E (Y LEVEL)
Specified value	400±10mV

[Adjustment Method]

1) Select the adjustment page F with the adjustment remote control.
2) Select the adjutment address 0E with the adjustment remote control, make note of the adjustment data of this address (data G), and then, set the adjustment data to FF.
3) Set the adjustment address to 15 with the adjustment remote control.
4) Change the adjustment data with the adjustment remote control to adjust the white clip level to 400±10mV.
5) Select the adjustment address 0E and enter to adjustment data F.
6) Change the adjustment address in order to store the adjustment data.
7) Make Y level adjustment as described in 3-3-20.

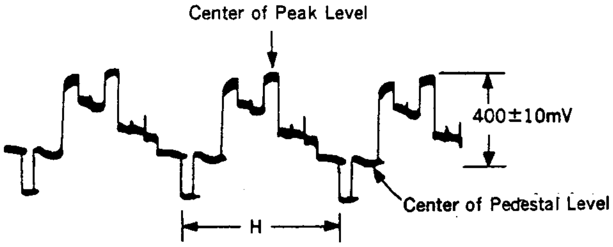


Fig. 3-28.

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3-3-20. Y Level Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN307 pin① (Y OUT) or checkpoint array pin(A8)(CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	0E (Y LEVEL)
Specified value	330±5mV

[Adjustment Method]

1) Check that the specified value in "3-3-19 White Clip Adjustment" is met.
2) Select the adjustment page 5 and the adjustment address 00, data 01 with adjustment remote control.
3) Select the adjustment page F and the adjustment address 0E with the adjustment remote control.
4) Change the adjustment data with the adjustment remote control and adjust the Y signal level to 330±5mV.
5) Change the adjustment address in order to store the adjusment data.

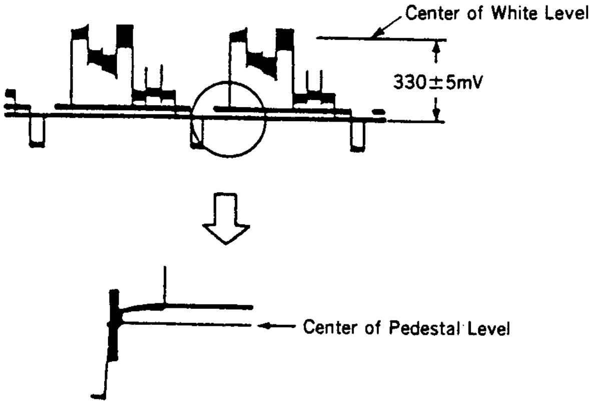

Fig. 3-29.

3-3-21. H Aperture Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN307 pin① (Y OUT) or checkpoint array pin(A8)(CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	0D (SHP LEVEL)
Specified value	40±5mV

[Adjustment Method]

1) Select the adjustment page F and the adjustment address 0D with the adjustment remote control.
2) Change the adjustment data with the adjustment remote control to set the aperture level (lower peak between "green" and "white") to a point 40±5mV above the pedestal level.
3) Change the adjustment address in order to store the adjustment data.

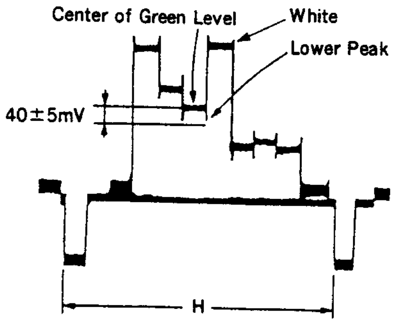

Fig. 3-30.

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3-3-22. Max Gain Adjustment (VC-86 Board)

Object	Color bar chart standard picture frame
Filter	ND filter 2.8 (1.0+1.0+0.4+0.4)
Measurement point	CN307 pin ① (Y OUT) or checkpoint array pin (A8)(CAM Y)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	18 (MAX GAIN)
Specified value	130±5mV

[Adjustment Method]

1) Cover the lens with the ND filter 2.8 (1.0+1.0+0.4+0.4).
2) Select the adjustment page F and the adjustment address 18 with the adjustment remote control.
3) Change the adjustment address with the adjustment remote control to adjust the Y signal level to 130±5mV.
4) Change the adjustment address in order to store the adjustment data.

Note : Although the ND filter is combined by using 4 pcs, if your ND filter is combined by using 3 pcs or less, resulting in 2.8, this combination should be available.

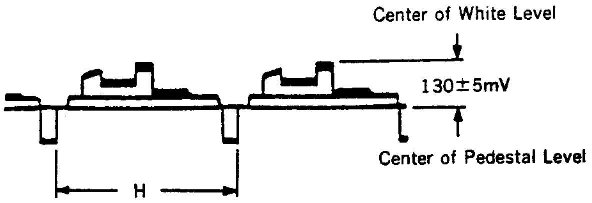

Fig. 3-31.

3-3-23. Manual Gain Data Adjustment (2) (VC-86 Board)

Object	Color bar chart standard picture frame
Filter	ND filter 2.5 (1.0+1.0+0.4+0.1)
Measurement point	CN307 pin ① (Y OUT) or checkpoint array pin (A8)(CAM Y)
Measuring instrument	Oscilltscope AF microcomputer data reader jig
Adjustment page	F
Adjustment address	65 (MAX GAIN) 64 (GAIN REF)
Specified value	130±5mV $(D_{64}-D_{7E})<18$

Note : Although four ND filters are used, adjust with your ND filters if three or less of them make 2.5.

[Adjustment Method]

1) Select the adjustment page 5 and the adjustment address 00, data 01 with the adjustment remote control.
2) Set the adjustment page F with the adjustment remote control.
3) Set the adjustment address EB and the adjustment data 0B with the adjustment remote control.
4) Turn off the AUTO LOCK switch (FD-44 board S217.)
5) Set the manual mode with the EXPOSURE button (FD-44 board S211).
6) Adjust to「+15dB」with the CONTROL switch (FD-44 board S210).
7) Cover the lens with the ND filter 2.5 (1.0+1.0+0.4+0.1).
8) Set the adjustment address 65 with the adjustment remote control.
9) Change the adjustment data so that the width between the center of the pedestal level and the center of the white level is 130±5mV.

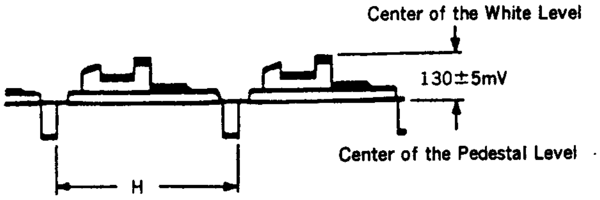

Fig. 3-32.

10) Remove the ND filter 2.5.
11) Set the adjustment address EB and the adjustment data 00 with the adjustment remote control.
12) Change the adjustment address in order to store the adjustment data.

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3-3-24. Warning Display Level Setting (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	66 (EMG AGC)

[Setting Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Set the adjustment page F with the adjustment remote control.
3) Set the adjustment address EB and the adjustment data 0B with the adjustment remote control.
4) Turn off the AUTO LOCK switch (FD-44 board S217)
5) Push the EXPOSURE button (FD-44 boamd S211) and adjust to 「+9 dB」 with the CONTROL switch (FD-44 board S210).
6) Input the value of the AF microcomputer data reader jig to the adjustment address 66.
7) Set the adjustment address EB and the adjustment address 00 with the adjustment remote control.
8) Change the adjustment address in order to store the adjustment data.

3-3-25. AE Offset Adjustment (VC-86 Board)

Object	All black (Cover the lens with a black cap.)
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment adress	1E (AE OFFSET) EB (MODE)
Specified value	The minimum in the range from 01 to 06

[Adjustment Method]

1) Make all black. (Cover the lens with a black cap)
2) Select the adjustment page F and set the adjustment address EB, data 13 with the adjustment remote control.
3) Set the adjustment address 1E with the adjustment remote control.
4) Change the adjustment data so that the value of the AF microcomputer data reader jig is the minimum in the range from 01 to 06.
5) Change the adjustment address in order to store the adjustment data.
6) After this adjustment, 「Standard AE Level, Program AE Level Setting」 should be performed.

3-3-26. Standard AE Level, Program AE Level Setting (VC-86 Board)

Object	Color bar chart standard picture frame
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	60 (IRIS REF NOR) 61 (IRIS REF PO) 62 (IRIS REF SP)
Specified value	$(D_{60}-D_{AE\ OFFSET})>59$

[Adjustment Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with adjustment remote control.
2) Store the value of the AF microcomputer data reader jig to the adjustment address 60. (This adjustment data of the adjustment address is set to D_{60}.)
3) Calculate the following formula and check that each value is over 59.

$$(D_{60}-D_{AE\ OFFSET})>59$$

D_{60} : Adjustment data of the adjustment address 60.
$D_{AE\ OFFSET}$: Adjustment data of the "AE Offset Adjustment".

4) After checking, store the value of (D_{60}—0C) to the adjustment address 61 and 62.
5) After the adjustment, set the adjustment address EB and the adjustment data 00 with the adjustment remote control.
6) Change the adjustment address in order to store the adjustment data.

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3-3-27. Manual Iris Data Adjustment (VC-86 Board)

Object	White pattern standard picture frame
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	63 (IRIS DATA 1)
Specified value	C8±01

[Adjustment Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Set the adjustment page F with the adjustment remote control.
3) Set the adjustment address EB and the adjustment data 05 with the adjustment remote control.
4) Turn off the AUTO LOCK switch (FD-44 board S217).
5) Push the EXPOSURE button (FD-44 board S211) and adjust to 「F8」 with the CONTROL switch (FD-44 board S210).
6) Change the adjustment data of the adjustment address 63 so that the value of the AF microcomputer data reader jig is C8±01.
7) Set the adjustment address EB and the adjustment data 00 with the adjustment remote control.
8) Change the adjustment address in order to store the adjustment data.

3-3-28. AE Check

[Preparation]

1) Turn off the AUTO LOCK switch (FD-44 board S217).

Note : Be sure to check in the order to 1 → 2.

1. Iris Preceding Mode Check (VC-86 Board)

Object	White pattern standard picture frame All black (Cover the lens with a black cap.)
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig and a monitor screen
Adjustment page	F
Specified value	When the object is all black on condition of the iris F4, the ▶ mark on the monitor screen should be flashing and the value of the AF microcomputer data reader jig should be FF.

[Checking Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Set the adjustment page F and set the adjustment address EB, data 11 with the adjustment remote control.
3) Set the iris preceding mode with the PROGRAM AE button. (FD-44 board S212)
4) Adjust to 「F4」 with the CONTROL switch (FD-44 board S210).
5) After two seconds, the ▶ mark on the monitor screen should not be flashing.
6) Check that this value of the AF microcomputer data reader jig is 81 to FE.
7) Make all black on the condition of 「F4」 (cover the lens with a black cap.)
8) After two seconds, check that the ▶ mark on monitor screen is flashing.
9) Check that this value of the AF microcomputer data reader jig is FF.
10) Change the adjustment address in order to store the adjustment data.
11) 「Shutter Preceding Mode Check」 should be performed.

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2. Shutter Preceding Mode Check (VC-86 Board)

Object	All black (Cover the lens with a black cap.)
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig and a monitor
Adjustment page	F
Specified value	The value of the AF microcomputer data reader jig should be FF.

[Checking Method]

1) Set the adjustment page F with the adjustment remote control.
2) Make all black (cover the lens with a black cap).
3) Set the shutter preceding mode with the PROGRAM AE button. (FD-44 board S212)
4) Check that the value of the AF microcomputer data reader jig is FF.
5) Check that the ▶ mark on the monitor screen is not flashing.

Note : After checking AE, set the adjustment address EB and the adjustment data 00. (Change the adjustment address in order to store the adjustment data.)

3-3-29. Brightness Mode Check (VC-86 Board)

Object	White pattern standard picture frame All black (Cover the lens with a black cap) Color bar chart standard picture frame
Filter	ND filter 2.5 (1.0+1.0+0.4+0.1)
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig Oscilloscope
Adjustment page	F
Adjustment address	EB (MODE)
Specified value	C8±02 01 to 07 130±10mV

[Adjustment Method]

1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Take a picture of the white pattern standard picture frame.
3) Select the adjustment page F and set the adjustment address EB, data 05 with the adjustment remote control.
4) Turn off the AUTO LOCK switch (FD-44 board S217).
5) Push the EXPOSURE button (FD-44 board S211) and adjust to the brightness mode.
6) Check that the value of the AF microcomputer data reader jig is C8±02.
7) Make all black (cover the lens with a black cap).
8) Check that the value of the AF microcomputer data reader jig is not changed from C8±02.
9) Realease the brightness mode and set again to the brightness mode.
   (「F1.4」 and 「+18dB」 should be displayed on the monitor TV.)
10) Check that the value of the AF microcomputer data reader jig is from 01 to 07.
11) Select the adjustment address EB and set the adjustment data 0B with the adjustment remote control.
12) Adjust to 「+15dB」 with CONTROL switch (FD-44 board S210).
13) Take a picture of the color bar chart standard picture frame and cover with the ND filter 2.5 (1.0+1.0+0.4+0.1).
14) Check that the width between the center of the pedestal level and the center of the white level is 130±10mV with the oscilloscope.

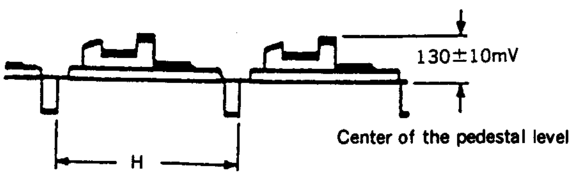


Fig. 3-33.

15) Remove the ND fiter 2.5.
16) Release the brightness mode, and after two seconds, set again to brightness mode. (「0db」 should be displayed on the monitor TV.)
17) Select the adjustment address EB and set the adjustment data 00 with the adjustment remote control.
18) Change the adjustment address in order to store the adjustment data.

Note : Although the ND filter is combined by using 4 pcs, if your ND filter is combined by using 3 pcs or less, resulting in 2.5, this combination should be available.

3-3-30. Auto White Balance Adjustment

Note 1 : Be sure to make "preset adjustment" and "auto white balance adjustment" in that order.

(1) Preset Adjustment (VC-86 Board)

Object	White pattern standard picture frame
Adjustment page	F
Adjustment address	EE (AWB MODE 1)

Note 1 : Make preset adjustment 30 seconds or more after turning on the power.

Note 2 : When redoing preset adjustment, turn off the power once, and then, turn it on again.

[Adjustment Method]

1) Turn off/on the power.
2) Obtain a picture of white pattern for over five seconds. (AF switch is turned off.)
3) Select the adjustment page 5 and the adjustment address 00, data 01 with the adjustment remote control.
4) Select the adjustment page F with the adjustment remote control.
5) Select the adjustment address EE by the adjustment remote control and set the adjustment data to be 01.
6) Change the adjustment address in order to store the adjustment data. (3200K data fetch 1)
7) Select the adjustment address EE by the adjustment remote control and set the adjustment data to be 23.
8) Change the adjustment address in order to store the adjustment data. (3200K data fetch 2)
9) Check that the LANC data is changed and the adjustment address 95 is selected.
10) Select the adjustment address EE by the adjustment remote control and set the adjustment data to be 00.
11) Change the adjustment address in order to store the adjustment data.
12) Make auto white balance adjustment.

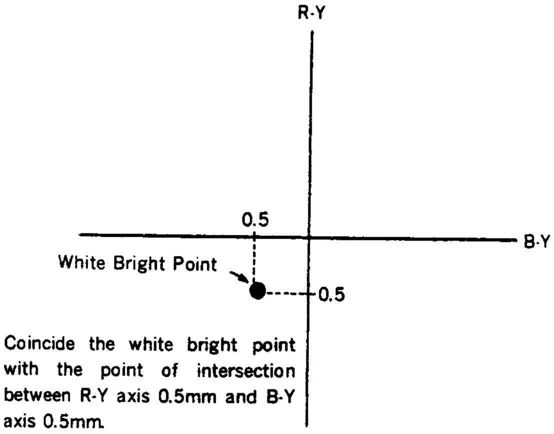
(2) Auto White Balance Adjustment

Note 1 : Be sure to make this adjustment after preset adjustment.

Object	All white pattern
Filter	Color temperature compensation filter C14
Measuring instrument	Vectorscope
Measurement point	VIDEO OUT terminal
Adjustment page	F
Adjustment address	01 (R CONT) 02 (B CONT)
Specified value	The white point must coincide.

[Adjustment Method]

1) Select the adjustment page F with the adjustment remote control.
2) Select the adjustment address EE and set the adjustment data D0 with the adjustment remote control.
3) Cover the lens with the C14 filter.
4) Change the adjustment address 01 and 02 with the adjustment remote control to coincide the white bright point with the point of intersection between R-Y axis 0.5mm and B-Y axis 0.5mm.
5) Select the adjustment address EE and enter the adjustment data 00.
6) Change the adjustment address in order to store the adjustment data.



Coincide the white bright point with the point of intersection between R-Y axis 0.5mm and B-Y axis 0.5mm.

Fig. 3-34.

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3-3-31. Shutter IN/OUT Adjustment (VC-86 board)

Object	White pattern standard picture frame All black (Cover the lens with a black cap)
Filter	ND filter 0.5 (0.4+0.1) and 0.8 (0.4+0.4)
Measurement point	CN655
Measuring instrument	AF microcomputer data reader jig
Adjustment page	F
Adjustment address	96 (SHUTTER IN) 97 (SHUTTER OUT)
Specified value	86±04 FF

[Adjustment Method]

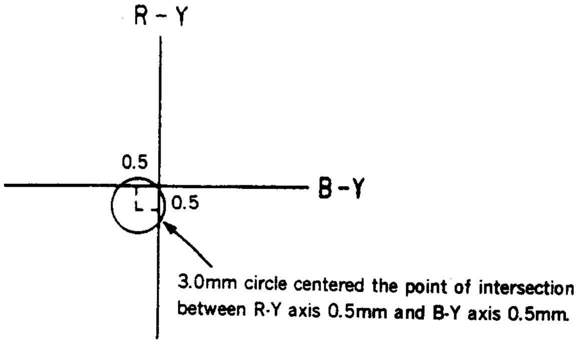
1) Select the adjustment page 5 and set the adjustment address 00, data 01 with the adjustment remote control.
2) Select the adjustment page F and set the adjustment address EB, data 11 with the adjustment remote control.
3) Turn off the AUTO LOCK switch (FD-44 board S217).
4) Push the EXPOSURE button (FD-44 board S211) and adjust to 「F1.4」 with the CONTROL switch (FD-44 board S210).
5) Attach the ND filter 0.5 (0.4+0.1) to the front of the lens.
6) After two seconds, store the data of the AF microcomputer data reader jig to the adjustment address 97. Check that this data is 86±04. (Set this data as D_{97}.)
7) Set (D_{97}+0A) to the adjustment address 96.
8) Attach the ND filter 0.8 (0.4+0.4) to the front of the lens.
9) Make all black. (Cover the lens with a black cap)
10) After two seconds, check that the data of the AF microcomputer data reader jig is FF.
11) Select the adjustment address EB and set the adjustment data 00 with the adjustmest remote control.
12) Change the adjustment address in order to store the adjustment data.

3-3-32. Outdoor White Balance Check

Object	White pattern standard picture frame
Filter	Color temperature compensation filter C14
Measurement point	VIDEO OUT terminal of the video block
Measuring instrument	Vectorscope
Specified value	Refer to Fig 3-35.

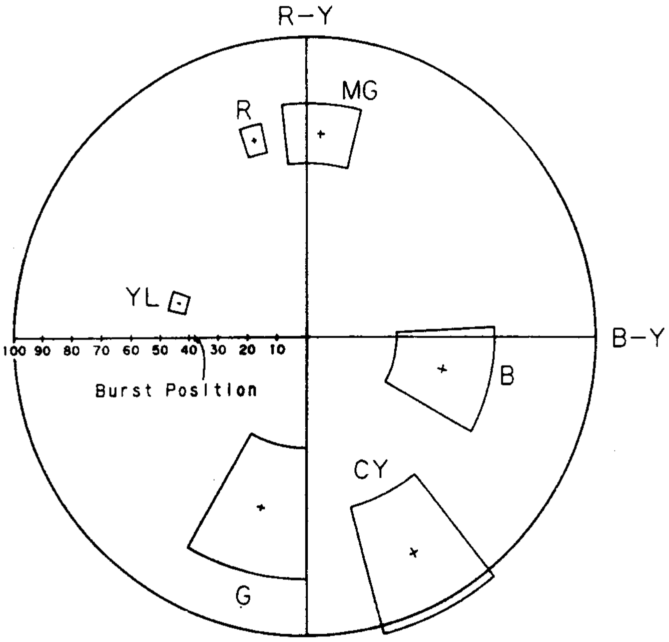
[Check Method]

1) Press the WHT BAL button (FD-44 board S209) to select the outdoor white balance mode. (A mark "☼" appears on the EVF screen or monitor screen (when the data screen is turned on)).
2) Check that the center of the white bright point is within the circumference shown in Fig. 3-35.

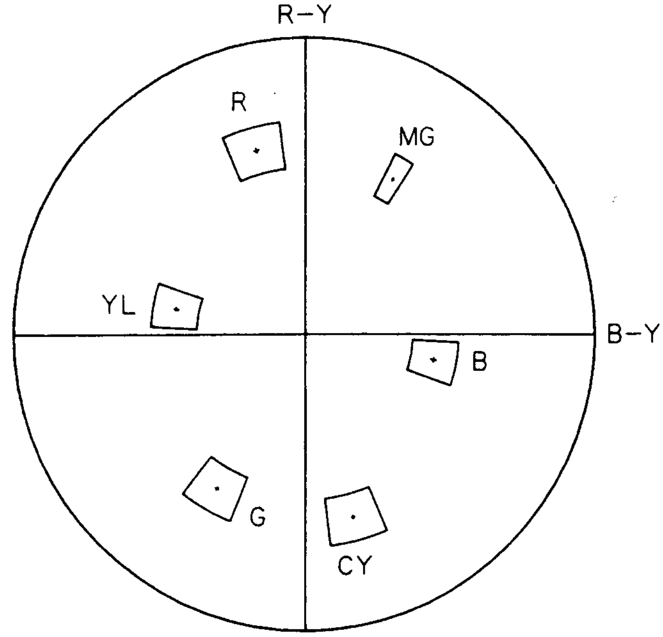


3.0mm circle centered the point of intersection between R-Y axis 0.5mm and B-Y axis 0.5mm.

Fig. 3-35.


R−Y
MG
R
YL
B−Y
100 90 80 70 60 50 40 30 20 10
Burst Position
B
CY
G

Color Reproducibility Adjustment


R−Y
R
MG
YL
B−Y
B
G
CY

Chroma Phase/Gain Adjustment

CCD−V600/V701

For Vectorscope

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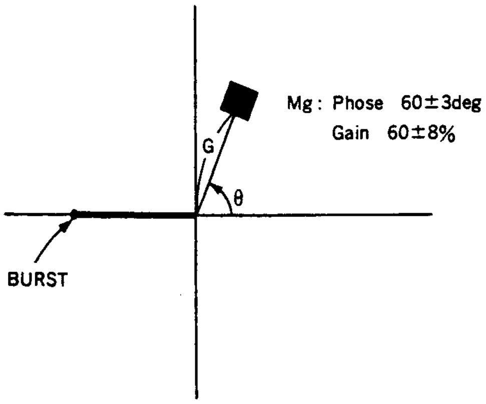
3-3-33. Chroma Phase/Gain Adjustment (FD-44 Board)

Mode	CAMERA Standby
Object	All Black (Cover the lens with a black cap.)
Measurement point	VIDEO OUT terminal
Measuring instrument	Vectorscope
Adjustment element	RV301
Specified value	Adjust Mg (Magenta) to the specified range. (Check that other colors are also in the specified range.)

[Adjustment Method]

1) Cover the lens of the camera with a black cap.
2) Press the TITLE 1. button (FD-44 board S202).
3) Select Mg (Magenta) pressing the COLOR/MODE button (FD-44 board S205).
4) Display the title on the whole screen pressing the MEMORY button (FD-44 board S204).
5) The specified range should be satisfied with RV301 at this time.
6) Check that the specified range of the other colors are also satisfied.



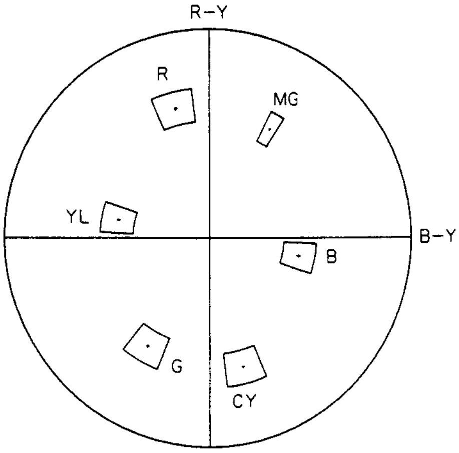


Fig. 3-36.

SECTION 4
ELECTRICAL ADJUSTMENT

See the adjusting part location diagram from on page 78 for the adjustment

4-1. PREPARATION FOR ADJUSTMENT

4-1-1. Equipment Required

The following measuring instruments are used for adjustment of the VTR block.

1) Monitor TV
2) Dual-trace oscilloscope, band width of 10MHz or more, with delay mode (use a probe 10 : 1, unless otherwise specified)
3) Frequency counter
4) Pattern generator (with video output terminal ; refer to 4-1-3 "Equipment Connection")
5) Digital voltmeter
6) Audio generator
7) Auido level meter
8) Audio distortion meter
9) Audio attenuator
10) Stabilized power supply
11) Alignment tape
    - For tracking adjustment
      (WR5-1NP) Part No. : 8-967-995-02
    - For video frequency characteristic adjustment
      (WR5-7NE) Part No. : 8-967-995-13
    - For L mode operation check
        - For SP (WR5-5NSP) Part No. : 8-967-995-42
          (WR5-4NSP) Part No. : 8-967-995-41
        - For LP (WR5-4NL) Part No. : 8-967-995-51
    - For E mode operation check (ME tape)
        - For SP (WR5-8NSE) Part No. : 8-967-995-43
        - For LP (WR5-8NLE) Part No. : 8-967-995-52
    - For audio adjustment
      (WR5-9NS) Part No. : 8-967-995-23

4-1-2. Precaution for Adjustment

Except "battery down adjustment" of system control system adjustment, "Switching position adjustment" of servo system adjustment the video block can be also adjusted with the camera block removed. When removing the camera block, disconnect the following 5 connectors.

1. DC-DC converter 2 pin connector (connect the FU-97 board CN101)
2. VC-86 board CN305
3. VC-86 board CN307
4. SW-168 board CN701
5. SW-168 board CN702

The audio system (AU-99 board) is not required for video block adjustment. When removing the AU-99 board, disconnect the following connectors.

1. VA-64 board CN551

Set the following menu as follows :
(Mode set)

- Hi8 ....AUTO
- REMOTE ....ON
- EDIT ....OFF
- BILINGUAL ....OFF

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4-1-3. Equipment Connection

Connect the measuring instruments as shown in Fig. 4-1 (a) in accordance with indication of an input terminal (S VIDEO or VIDEO), and shift the CAMERA/VTR switch (FK-47 board S509) to VTR to make adjustment. The input terminal is specified in parentheses at the signal blank. When not specified, either input terminal may be used. The S VIDEO IN terminal has priority. When making adjustment with VIDEO IN terminal input, pull out a connector from the S VIDEO IN terminal.

Note 1 : When VIDEO input is used for adjustment where S VIDEO input is specified, the specifications of this equipment may not be satisfied. Be sure to follow instructions.

Note 2 : When adjustment is made using the VTR with S VIDEO output terminal as a signal source, the performance of this equipment is affected by that VTR. Use the pattern generator with Y/C separator output terminal as much as possible.

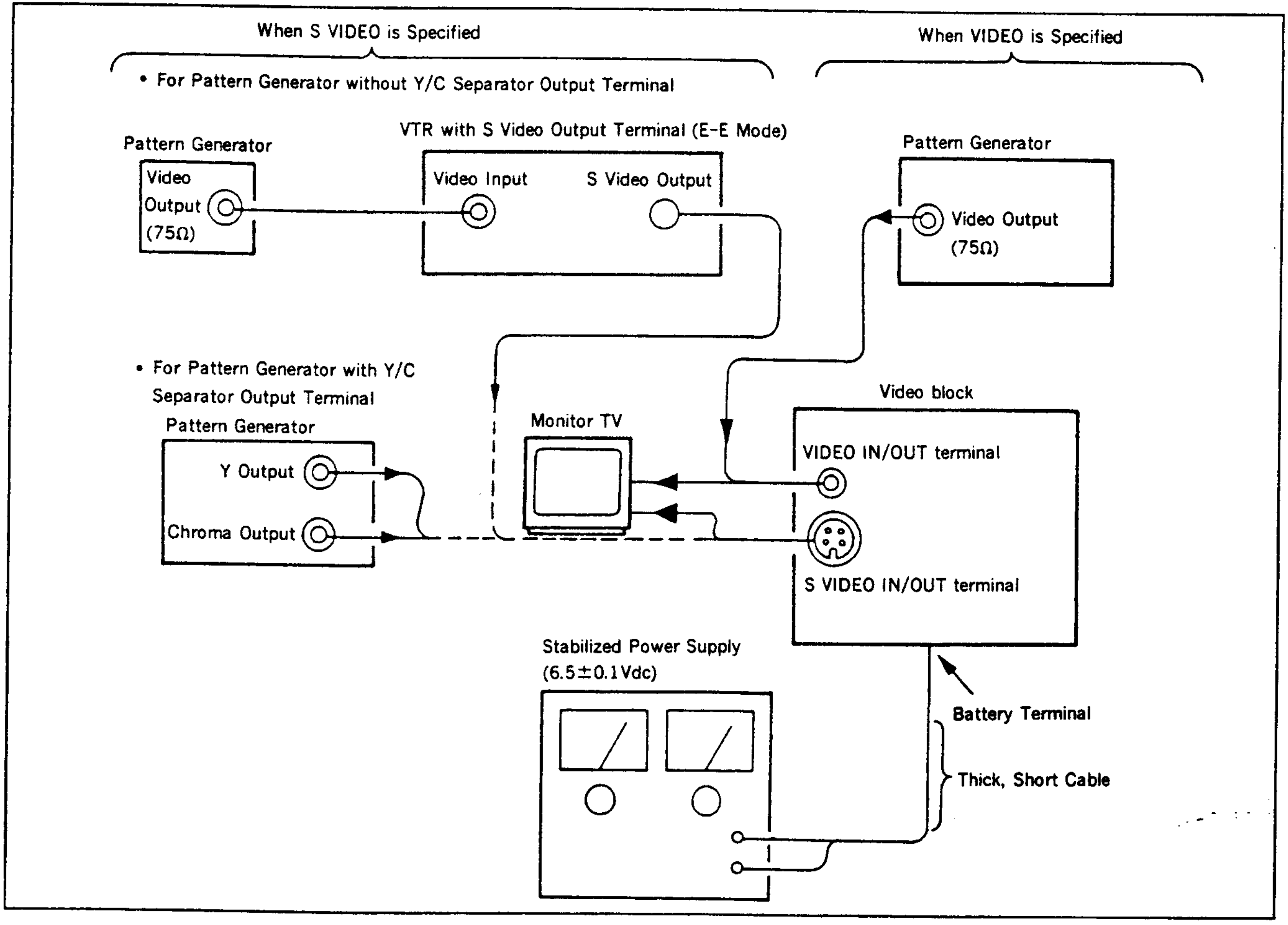
When S VIDEO is Specified
• For Pattern Generator without Y/C Separator Output Terminal
Pattern Generator
Video Output (75Ω)
VTR with S Video Output Terminal (E-E Mode)
Video Input
S Video Output
When VIDEO is Specified
Pattern Generator
Video Output (75Ω)
• For Pattern Generator with Y/C Separator Output Terminal
Pattern Generator
Y Output
Chroma Output
Monitor TV
Video block
VIDEO IN/OUT terminal
S VIDEO IN/OUT terminal
Stabilized Power Supply (6.5±0.1Vdc)
Battery Terminal
Thick, Short Cable

Fig. 4-1 (a)

Note 3 : When inputting in the "CAMERA" mode, set the CAMERA/VTR switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar in the procedure as shown in Fig. 4-1 (b).

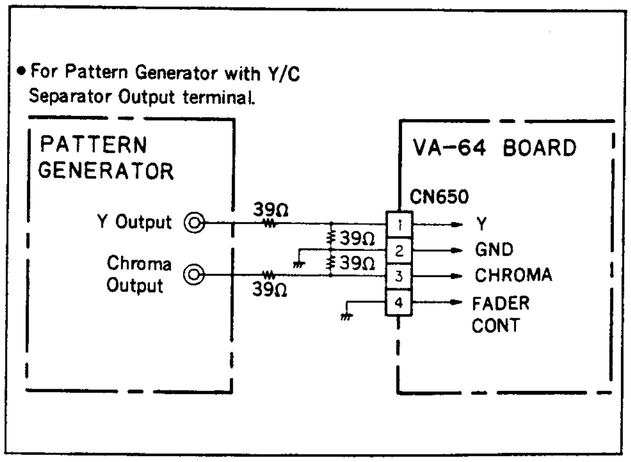
• For Pattern Generator with Y/C Separator Output terminal.
PATTERN GENERATOR
Y Output
Chroma Output
39Ω
39Ω
39Ω
39Ω
VA-64 BOARD
CN650
1
2
3
4
Y
GND
CHROMA
FADER CONT

Fig. 4-1 (b)

4-1-4. Input Signal Check

Video signals from the pattern generator are used as adjustment signals for adjustment of the VTR block. These video output signals should be within the required standard.

1) For S VIDEO input

Connect an oscilloscope to the Y signal terminal of the S VIDEO IN terminal (VA-64 board J650) and check that a Y signal sync. signal has an amplitude of about 0.3 Vp-p, and an image amplitude is about 0.7 Vp-p. (When the VTR with S VIDEO OUT terminal is used, check also that neither chroma signal nor burst signal is remaining.) Also, connect the oscilloscope to the chroma signal terminal of the S VIDEO IN terminal and check that the burst signal for the chroma signal has a flat amplitude of about 0.3 Vp-p, and that a burst signal vs. chroma signal amplitude ratio is 0.30 : 0.66. Fig. 4-2 shows the Y and chroma signals used for adjustment.

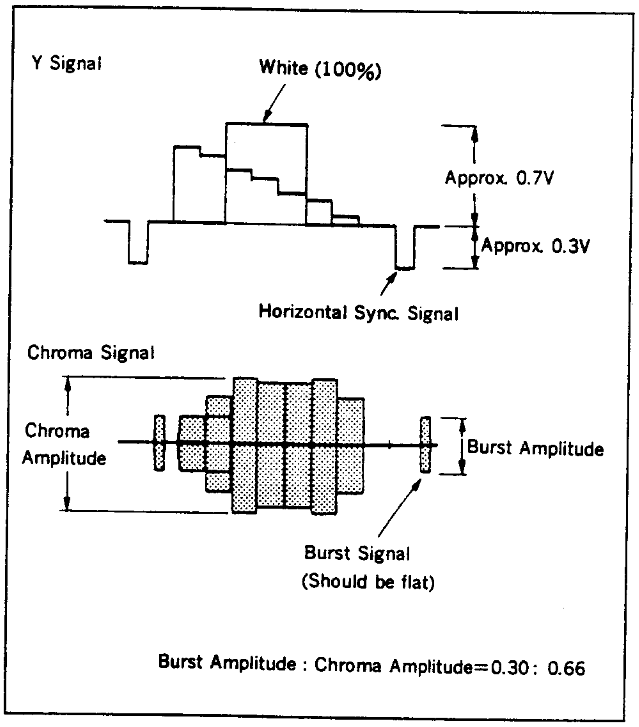
Y Signal
White (100%)
Approx. 0.7V
Approx. 0.3V
Horizontal Sync. Signal
Chroma Signal
Chroma Amplitude
Burst Amplitude
Burst Signal
(Should be flat)
Burst Amplitude : Chroma Amplitude=0.30: 0.66

Fig. 4-2. Pattern Generator Color Bar Signals

2) For VIDEO input

Connect the oscilloscope to the VIDEO IN terminal (VA-64 board J650) and check that a video signal sync. signal amplitude is approx. 0.3V, image amplitude approx. 0.7V, and burst signal amplitude approx. 0.3V and flat, respectively, and that a burst signal vs. "red" signal level ratio is 0.30 : 0.66.

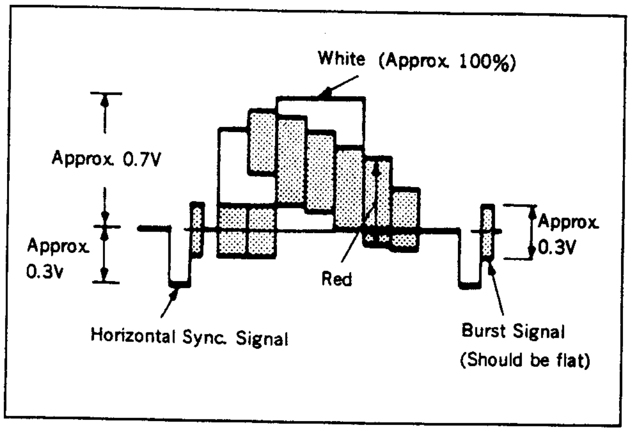
White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal Sync. Signal
Burst Signal
(Should be flat)

Fig. 4-3. Pattern Generator Color Bar Signal

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[Alignment Tape]

The following alignment tapes are provided. Use the alignment tape specified in the signal blank for each adjustment. When using the operation checking tape for adjustment and no type is specified, you can use any operation checking tape.

Tape	Recording Mode	Tape Type	Tape Speed	Recording content		Use
				Video Area	PCM Area	
Tracking WR5-1NP	L	MP	SP	CH2 : 1 MHz tape path adjustment signal, Switching position adjustment marker (CH1 : 9MHz)		Tape path adjustment, Switching position adjustment
Video frequency characteristic WR5-7NE	E	ME	SP	RF sweep 0~15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Operation checking WR5-4NSP or WR5-5NSP	L	MP	SP	● Video signal Color bar : 4min. Monoscope : 4min. ● Audio signal (AFM) 400Hz, 60%modulation	● Audio signal (PCM) Monoscope portion 20Hz, 20sec. 400Hz, 20sec. 14kHz, 20sec. Repeat 4 times Color bar portion 1kHz, 4min.	Operation checking
WR5-8NSE	E	ME	SP			
WR5-4NL	L	MP	LP	● Video signal Color bar : 4min. Monoscope : 4min. ● Audio signal (AFM) 400Hz, 60%modulation		
WR5-8NLE	E	ME	LP		● Audio signal (PCM) 400Hz	
AFM stereo checking operation WR5-9NS (8-967-995-23)	L	MP	SP	● Video sigmal Color bar : 4minutes Monoscope : 4minutes ● Audio signal (AFM) Stereo section (color bar) L ch : 400Hz, R ch : 1kHz L+R : 1.5MHz, ±60kHz DEV L−R : 1.7MHz, ±30kHz DEV Bilingual section (monoscope) MAIN : 400Hz (1.5MHz, ±60kHz DEV) SUB : 1kHz (1.7MHz, ±30kHz DEV)	● Audio signal (PCM) 400Hz : 8minutes	AFM stereo operation check

Note : Recording modes
L .... Conventional mode
E .... Hi8 (high band) mode

Tape types
MP .... Coated metal tape
ME .... Evaporated metal tape

Fig. 4-4 shows the 75% color bar signal recorded in the alignment tape.

Note : Measure at the VIDEO OUT terminal (terminated at 75Ω).

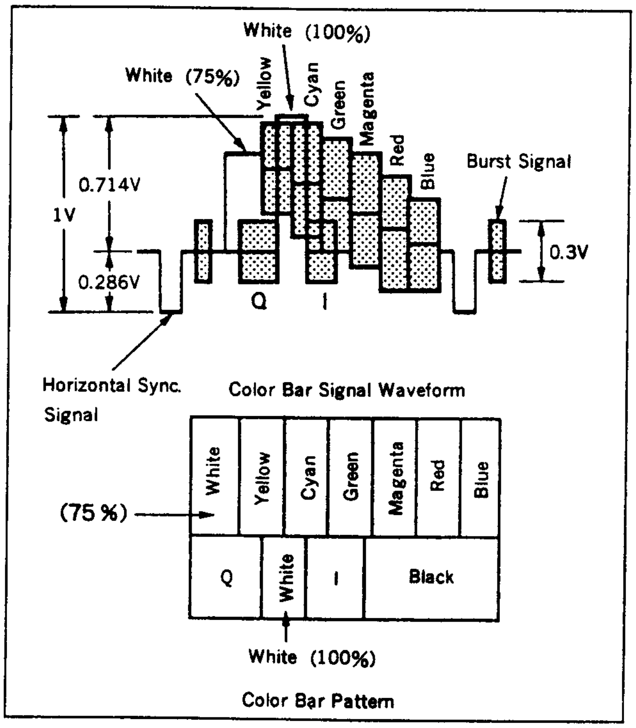
White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst Signal
0.714V
1V
0.286V
0.3V
Q
I
Horizontal Sync. Signal
Color Bar Signal Waveform
White
Yellow
Cyan
Green
Magenta
Red
Blue
(75 %)
Q
White
I
Black
White (100%)
Color Bar Pattern

Fig 4-4. Alignment Tape Color Bar Signal

[I/O Level and Impedance]

Video Input/Output	Pin jack signal :	1 Vp-p, 75Ω unbalance, sync. negative
S video Input/Output	(4-pin mini-DIN) Luminance signal :	1 Vp-p, 75Ω unbalance, sync. negative
	Color signal :	0.286 Vp-p, 75Ω unbalance
Auido Input/Output	(Input)	−7.5dBs Input impedance 47kΩ or more
	(Output)	−7.5 dBs (at 47kΩ load) Output impedance 1kΩ less

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4-1-5. Recording Mode (E Mode/L Mode) Changeover

The recording mode of this equipment is changed over as shown in the table below. The playback mode (E mode/L mode) is automatically changed over depending on the recording mode for the tape to be played back.

Menu Mode set [Hi8] (L Model/E Model Selector Menu)	CAMERA/VTR Power Switch (FK-47 Board S509)	S VIDEO IN Terminal (VA-64 Board J650)	Tape Used	Recording Mode
AUTO (E mode)	CAMERA	Irrelevant	ME	E
			Hi MP	
			MP	L
	VTR	Connector inserted	ME	E
			Hi MP	
			MP	L
		Nothing inserted	ME	E
			Hi MP	
			MP	L
OFF (L mode)	Irrelevant	Irrelevant	ME	L
			Hi MP	
			MP	

4-2. POWER SUPPLY CHECK

4-2-1. Supply Voltage Check (FU-97 Board)

Mode	E-E
Measuring instrument	Digital voltmeter
SS 5V check	
Measurement point	CN102 pin ⑫
Specified value	4.9±0.15Vdc
VI 5V check	
Measurement point	CN102 pin ⑳
Specified value	4.9±0.15Vdc
AUDIO 5V check	
Measurement point	CN102 pin ⑭
Specified value	4.9±0.15Vdc
EVF 5V check	
Measurement point	CN102 pin ⑬
Specified value	4.9±0.15Vdc

[Check Method]

1) Each supply voltage must meet its specified value.

4-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

4-3-1. Battery Down Adjustment

Mode	CAMERA REC
Signal	Unnecessary
Measurement point	Display on the adjustment remote control
Measuring instrument	Adjustment remote control
Adjustment Page	D
Adjustment address	06
Specified value	d:7d:06(reference value) Note: Actually, exact data of 5.5V_{DC} of page D address 06 is written.

[Connection]

1) Make the set MIC board, EVF board, and CAMERA section connected.
2) Connect the adjustment remote control to the REMOTE terminal.
3) Connect the digital voltmeter so to measure the voltage of the stabilized power supply unit connected to the battery terminal.

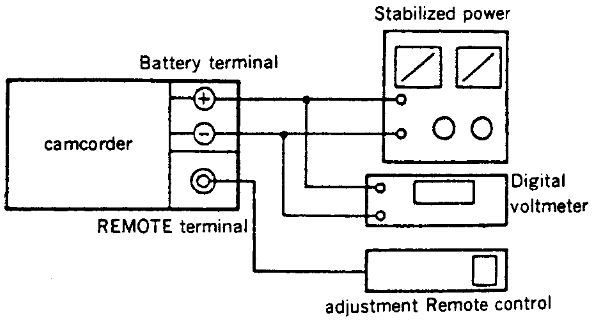
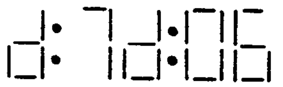


Fig. 4-5.

[Adjustment Method]

1) Turn on the POWER switch. (CAMERA mode)
2) Adjust the output of the stabilized power supply unit to be 5.58±0.01 V_{DC} (battery terminal voltage).
3) Turn on the CAMERA REC mode.
4) Set the HOLD switch of the remote control for adjustment to the HOLD side.
5) Press once the EDIT SEARCH (+) button of the adjustment commander select page 1, select data 01 of address 00, and release the protector.
6) Press four times the EDIT SEARCH (−)button of the remote control for adjusment. (Set the adjustment page to D.)
7) Read adjustment data at adjustment address 06 on adjustment page D with the sensor LANC.


(reference value)

8) Store the adjustment data read in Step 7) to adjustment address 07.
9) Turn off the POWER switch.

[Checking Method]

1) Turn on the power.
2) Adjust the output of the stabilized power source to be $5.66 \pm 0.01V_{DC}$.
3) Set the camera REC mode.
4) After five seconds,TALLY should flash at 0.8Hz. (Battery Pre End)
5) Adjust the output of the stabilized power source to be $5.58 \pm 0.01V_{DC}$.
6) Set the camera REC mode.
7) After five seconds, STOP mode should be set and TALLY should flash a 3.2Hz. (Battery END)

4-3-2. Clock Accuracy Adjustment (FD-44 Board)

Mode	E-E
Signal	Unnecessary
Measurement point	IC201 pin (69)
Measuring instrument	Ocsilloscope Frequency counter
Adjustment element	CT201
Specified value	512.003±0.001Hz

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 512.003±0.001Hz with CT201.

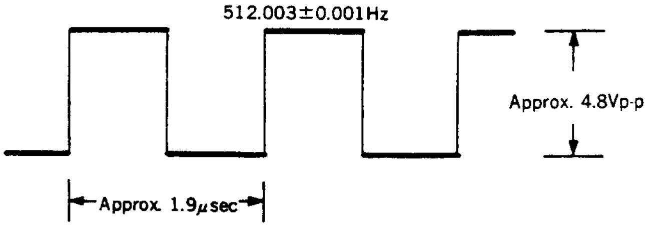


Fig. 4-6.

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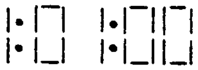
4-4. SERVO SYSTEM ADJUSTMENT

4-4-1. Switching Position Adjustment (SS-134 Board)

Mode	Playback
Signal	Alignment tape : Operation check (WR5-1CP)
Measurement point	CH1 : CN200 pin ④ (RF SWP) CH2 : CN200 pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	05 04
Specified value	$t_1 = 0 \pm 5\mu$sec $t_2 = 0 \pm 5\mu$sec

[Adjustment Method]

1) Set the HOLD switch of the remote control for adjustment to the HOLD side. (ADJUST MODE is set.)
2) Select page 1 with the remote control for adjustment and select adjustment data 01 of adjustment address 00. (Protector is released.)



3) Press four times the EDIT SEARCH (—) button of the remote control for adjustment. (Adjustment page D is set.)
4) Select the adjustment address to 05 (for coarse adjustment) in order to change the adjustment data, and adjust to minimize "t_1".
5) Press the PAUSE button in order to store the adjustment data.
6) Select the adjustment address 04 (for fine adjustment) in order to change the adjustment data and adjust to $t_1 = 0 \pm 5\mu$sec.
7) Press the PAUSE button in order to store the adjustment data.

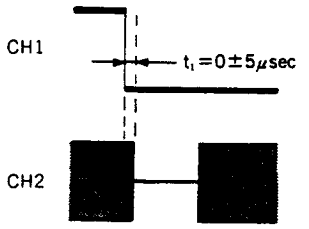


Fig. 4-7.

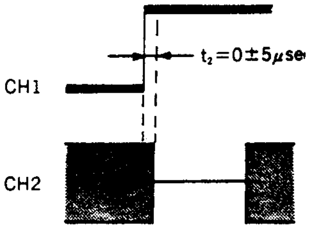


Fig. 4-8.

8) Confirm to $t_2 = 0 \pm 5\mu$sec.
If necessary, repeat steps 6) to 8).

Note : t_1 moves approximately 1μsec per step of data at adjustment address 04. t_1 moves approximately 16μsec per step of data at adjustment address 05.

4-4-2. Oscillation Frequency Adjustment (FU-97 Board)

Mode	Record
Signal	Unnecessary
Measurement point	Q102 collector
Measuring instrument	Oscilloscope Frequency counter
Adjustment element	RV102
Specified value	400±2kHz

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 400±2kHz with RV102.

4-4-3. Output Voltage Adjustment (FU-97 Board)

Mode	Record
Signal	Unnecessary
Measurement point	(+) side : CN102 pin ⑳ (VI 5V) (−) side : CN102 pin ⑲ (VI GND)
Measuring instrument	Digital voltmeter
Adjustment element	RV101
Specified value	4.90±0.02V_{DC}

[Adjustment Method]

1) Adjust to 4.90±0.02V_{DC} with RV101.

4-5. VIDEO ADJUSTMENT

The adjustment of the video system should in principle follow the adjustment procedure below. The color video input signal supplied from the pattern generator is used as the video input signal for video adjustment in the REC mode. Make sure that the SYNC signal and color burst signal are matched with the standard specified for set-up as shown in the Fig. 4-2 during adjustment.

[Adjustment Sequence]

1) Playback Frequency Characteristic Adjustment
2) X'tal Oscillator fo Check
3) E-E Adjustment
4) IR Adjustment
5) Chroma Comb Filter Adjustment
6) Emphasis Y Level Adjustment
7) L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
8) E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
9) Chroma Emphasis Adjustment
10) Recording Current Adjustment
11) Y Level Adjustment
12) C Out Level Adjustment
13) PB CCD Input Level Adjustment
14) E Mode PB Y Level Adjustment
15) YD Adjustment

4-5-1. Playback Frequency Characteristic Adjustment (SS-134 Board)

(1) CH1, CH2 Adjustment

Description in [ ] is for CH2 adjustment.

Mode	Playback
Signal	Alignment tape for frequency characteristic adjustment (WR5-7NE)
Measurement point	CN200 pin ③ External trigger : CN200 pin ④ (RF SWP) Trigger scope : +, [−]
Measuring instrument	Oscilloscope
Adjustment element	RV202 [RV203]
Specified value	When the 4.5MHz signal level is set to 3, the 8.5 MHz signal level is 2±0.2.

[Adjustment Method]

1) Adjust RV202 [RV203] so that the 8.5MHz signal level will be 2±0.2 when the 4.5MHz signal level is set to 3.

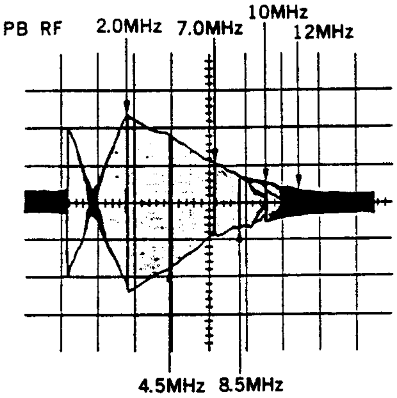


Fig. 4-9.

(2) CH1' Adjustment

Mode	Playback (service mode)
Signal	Alignment tape for frequency characteristic adjustment (WR5-7NE)
Measurement point	CN200 pin ③ External trigger : CN200 pin ④ (RF SWP) Trigger slope : −
Measuring instrument	Oscilloscope
Adjustment element	RV201
Specified value	The 8.5MHz signal level is 2±0.2 when the 4.5 MHz signal level is set to 3.

[Adjustment Method]

1) Turn on the HOLD of the adjustment remote control.
2) Set the adjustment remote control page 1 and the adress 4D, and write down the data value. (This data is set to A.).
3) Adjust the data to 20 with the adjustment remote control.
4) Feed the address in order to store the adjustment data.
5) Turn off the HOLD of the adjustment remote control and set the playback mode.
6) Adjust with RV201 so that the 8.5MHz signal level in 2±0.2 when the 4.5MHz signal is set to 3.
7) After the adjustment, set the page 1 and the address 40, and set the data A.
8) Feed the address in order to store the adjustment data.

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4-5-2. X'tal Oscillator fo Check (VA-64 Board)

Made	E-E
Signal	Color bar
Measurement point	IC651 pin ⑫
Measuring instrument	Oscilloscope Frequency counter
Specified value	3579545±50Hz

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Check Method]

1) Make sure that the oscillation frequency of IC651 pin ⑫ is 3579545±50Hz.

3579545±50Hz

Fig. 4-10.

4-5-3. E-E Level Adjustment (VA-64 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	J651 (VIDEO OUT terminal)
Measuring instrument	Oscilloscope
Adjustment element	RV652
Specified value	1.000±0.025Vp-p

Note1 : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

Note2 : J651 (VIDEO OUT terminal) mast be terminated at 75Ω.

[Adjustment Method]

1) Adjust to 1.000±0.025Vp-p with RV652.

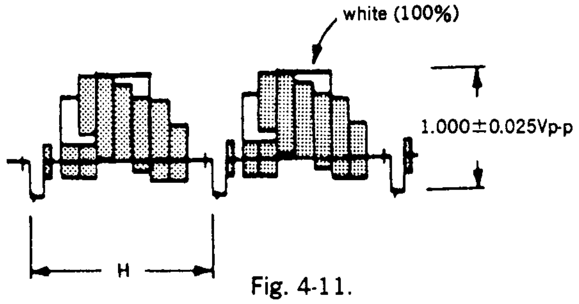

Fig. 4-11.

4-5-4. IR Adjustment (VA-64 Board)

Mode	Record
Signal	Color bar (VIDEO)
Measurement point	IC650 pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV650
Specified value	Minimum red residual chroma component (50mVp-p or less)

[Preparation]

1) Short the IC650 pin ⑭ and pin (51).

[Adjustment Method]

1) Minimize the red residual chroma component with RV650.(50mVp-p or less)

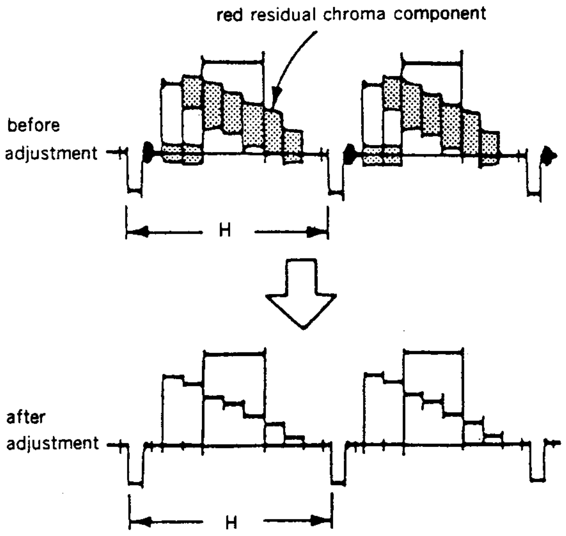

Fig. 4-12.

4-5-5. Chroma Comb Filter Adjustment (VA-64 Board)

Mode	Record
Signal	Color bar
Measurement point	IC650 pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV651 (COMB) RV664 (SEP)
Specified value	Minimum red residual chroma component (12mVp-p or less)

[Adjustment Method]

1) Adjust RV651 and RV664 alternately and minimize the red residual chroma component. (12mVp-p or less)

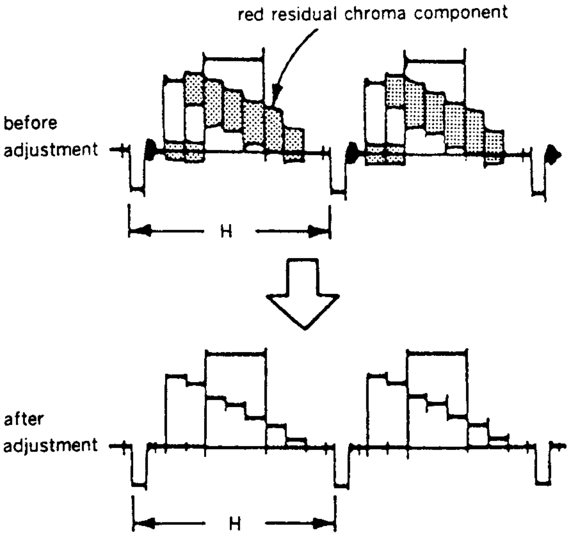

Fig. 4-13.

4-5-6. Emphasis Y Level Adjustment (VA-64 Board)

Mode	Record
Signal	Color bar
Measurement point	IC650 pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV662
Specified value	500±25mVp-p

Note : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment Method]

1) Adjust to 500±25mVp-p with RV662.

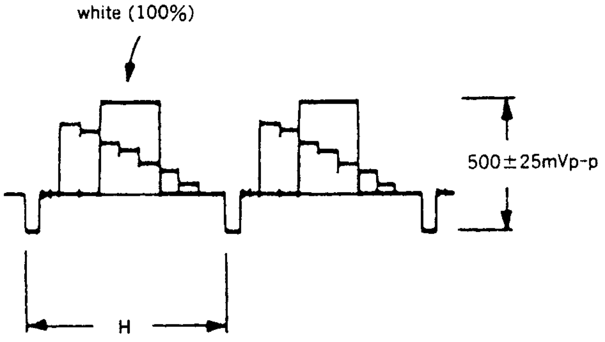

Fig. 4-14.

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4-5-7. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note : After completing this adjustment, be sure to make E mode Y FM carrier frequency, Y FM deviation adjustment as described in 4-5-8.

(1) L Mode Y FM Carrier Frequency Adjustment (VA-64 Board)

Mode	E-E
Signal	No signal
Measurement point	IC650 pin ㊸ (Y RF OUT)
Measuring instrument	Frequency counter Oscillcscope
Adjustment element	RV653
Specified value	4.38±0.05MHz

Note1 : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

Note2 : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment Method]

1) Set an MP type cassette tape.
2) Adjust to 4.38±0.05MHz with RV653.
3) Make L mode Y FM deviation adjustment described in (2) below.

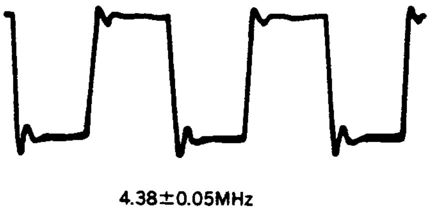

Fig. 4-15.

(2) L Mode Y FM Deviation Adjustment (VA-64 Board)

Mode	Recording and playback
Signal	Color bar (S VIDEO)
Measurement point	J650 (S VIDEO) Y signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV654
Specified value	Playback level of 1.00±0.05Vp-p

Note 1 : Y level out adjustment and L mode Y FM carrier frequency adjustment must have been completed.

Note2 : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment Method]

1) Set an MP type cassette tape.
2) Record the color bar signal.
3) Playback the recorded signal.
4) Check the playback output level.
   Specified value: 1.00±0.05Vp-p.
5) When the specified value is not met, turn RV654 as follows and repeat the steps 1) through 4) above.

	RV654 Rotating Direction
When larger than specified value	Counterclockwise direction(↶)
When smaller than specified value	Clockwise direction (↷)

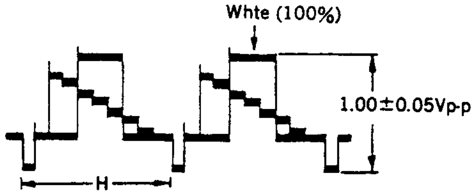

Fig. 4-16.

4-5-8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1 : Make this adjustment after completing "4-5-7 L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment".

Note 2 : A connector must be inserted into the S VIDEO IN terminal (J650) (at no-signal time as well).

(1) E Mode Y FM Carrier Frequency Adjustment (VA-64 Board)

Mode	E-E
Signal	No signal
Measurement point	IC650 pin ㊸ (Y RF OUT)
Measuring instrument	Frequency counter Osclloscope
Adjustment element	RV656
Specified value	5.99±0.05MHz

Note1 : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

Note2 : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment method]

1) Set an ME type cassette tape.
2) Adjust to 5.99±0.05MHz with RV656.
3) Make E mode Y FM deviation adjustment as described in (2) below.

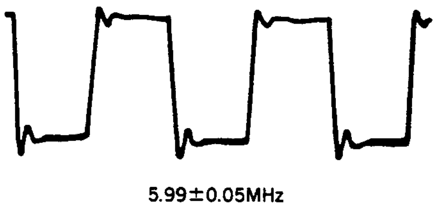

Fig. 4-17.

(2) E Mode Y FM Deviation Adjustment (VA-64 Board)

Mode	Recording and playback
Signal	Color bar (S VIDEO)
Measurement point	J650 (S VIDEO) Y signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV657
Specified value	Playback level of 1.00±0.05Vp-p

Note 1 : Y out level adjustment and E mode Y FM carrier frequency adjustment must have been completed.

Note2 : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment Method]

1) Set an ME type cassette tape.
2) Record the color bar signal.
3) Playback the recorded signal.
4) Check the playback output level.
   Specified value : 1.00±0.05Vp-p
5) When the specified value is not met, turn RV657 as follows and repeat the steps 1) through 4) above.

	RV657 Rotating Direction
When larger than specified value	Counterclockwise direction (↺)
When smaller than specified value	Clockwise direction (↻)

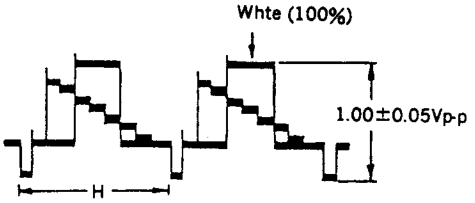

Fig. 4-18.

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4-5-9. Chroma Emphasis Adjustment (VA-64 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	IC651 pin ㉔
Measuring instrument	Oscilloscope
Adjustment element	FL650
Specified value	Minimum red level (170mVp-p or less)

Note : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Adjustment Method]

1) Minimize the red level with FL650 (170mVp-p or less)

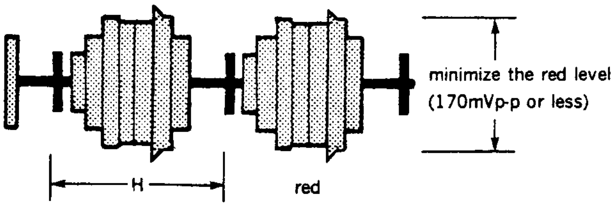

Fig. 4-19.

4-5-10. Recording Current Adjustment

Make this adjustment in the E mode, using the ME tape. Before adjustment, check the following :

1) A connector must be inserted into the S VIDEO IN terminal (VA-64 board J650). (at no-signal time as well) Also, remove CN002 of the CC-60 board in order to prevent the index system from being affected.

(1) REC Y Recording Current Adjustment (SS-134 Board)

Mode	Recording
Signal	No signal
Measurement point	TP204
Measuring instrument	Oscilloscope
Adjustment element	RV207
Specified value	160±10mVp-p

Note 1 : After REC Y recording current adjustment, be sure to make REC C, REC AFM and REC ATF recording current adjustments or check.

[Adjustment Method]

1) Set an ME type cassette tape and select the recording mode.
2) Adjust to 160±10mVp-p with RV207.

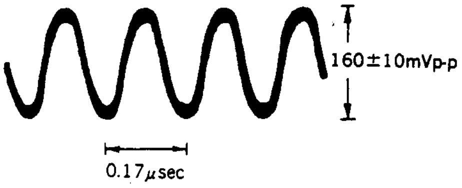

Fig. 4-20.

(2) REC C Recording Current Adjustment (SS-134 Board)

Mode	Recording
Signal	Color bar (S VIDEO)
Measurement point	TP204
Measuring instrument	Oscilloscope
Adjustment element	RV206
Specified value	35±3mVp-p

Note : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Connection]

1) Connect the following 3 sections with jumper wires.
   1. VA-64 board W650 pin ㉙ (REC Y RF) to pin ① (VIDEO 5V)
   2. VA-64 board W650 pin ㉞ (REC AFM RF) to pin ① (VIDEO 5V)
   3. SS-134 board Q153 emitter (ATF) to IC150 pin ㉗ (SS 5V)

[Adjustment Method]

1) Set an ME type cassette tape and select the recording mode.
2) Adjust to 35±3mVp-p with RV206.
3) After REC C recording current adjustment, be sure to make REC AFM and REC ATF recording current adjustments.

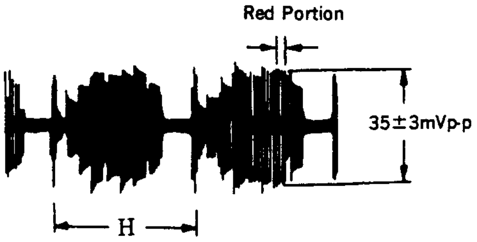

Fig. 4-21.

(3) REC AFM Recording Current Adjustment
(SS-134 Board)

Mode	Recording
Signal	No signal
Measurement point	TP204
Measuring instrument	Oscilloscope
Adjustment element	RV205
Specified value	10.0±1.5mVp-p

Note 1 : When the TP204 signal level is too low to read, connect directly through a 100Ω resistor as shown in the figure below instead of using a probe of 10 : 1.

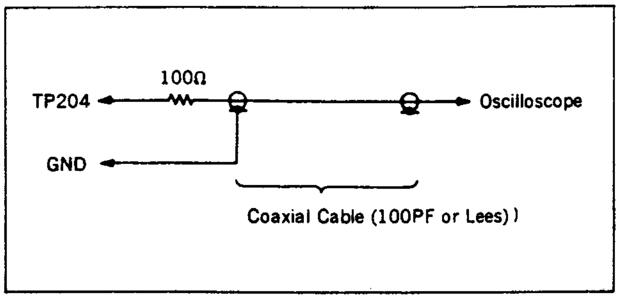

Fig. 4-22.

[Connection]

1) Connect the following 3 sections with jumper wires :
   1. VA-64 board W650 pin ㉙ (REC Y RF) to pin ① (VIDEO 5V)
   2. VA-64 board W650 pin ㉛ (REC C RF) to pin ① (VIDEO 5V)
   3. SS-134 board Q153 emitter (ATF) to IC150 pin ㉗ (SS 5V)

[Adjustment Method]

1) Set an ME type cassette tape and select the recording mode.
2) Adjust to 10.0±1.5mVp-p with RV205.

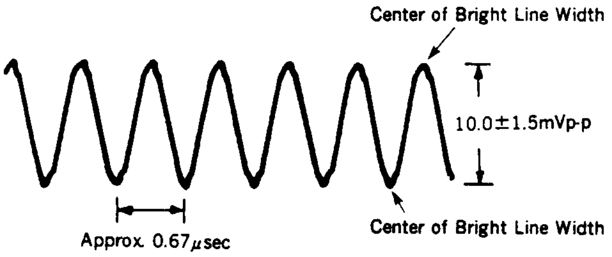

Fig. 4-23.

(4) REC ATF Recording Current Check
(SS-134 Board)

Mode	Recording
Signal	No signal
Measurement point	TP204
Measuring instrument	Oscilloscope
Specified value	8.0±1.5mVp-p

Note 1 : When the TP204 signal level is too low to read, connect directly through a 100Ω resistor as shown in the figure below without using a probe of 10 : 1.

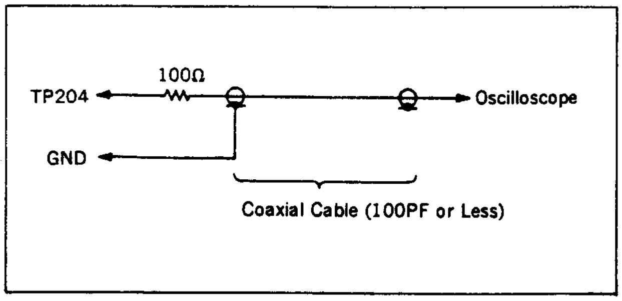

Fig. 4-24.

[Connection]

1) Connect the following 3 sections with jumper wires.
   1. VA-64 board W650 pin ㉙ (REC Y RF) to pin ① (VIDEO 5V)
   2. VA-64 board W650 pin ㉛ (REC C RF) to pin ① (VIDEO 5V)
   3. VA-64 board W650 pin ㉞ (REC AFM RF) to pin ① (VIDEO 5V)

[Adjustment Method]

1) Set an ME type cassette tape and select the recording mode.
2) Check to 8.0±1.5mVp-p

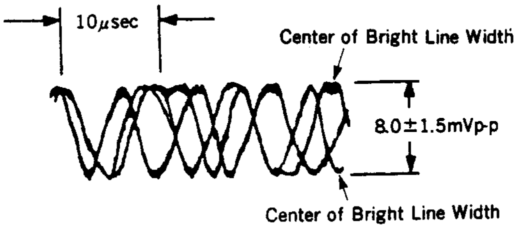

Fig. 4-25.

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4-5-11. Y OUT Level Adjustment (VA-64 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	J650 (S VIDEO) Y signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV661
Specified value	1.00±0.025Vp-p

Note : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Connection]

1) Terminate the signal terminal for J650 (S VIDEO) at 75Ω.

[Adjustment Method]

1) Adjust to 1.00±0.025Vp-p with RV661.

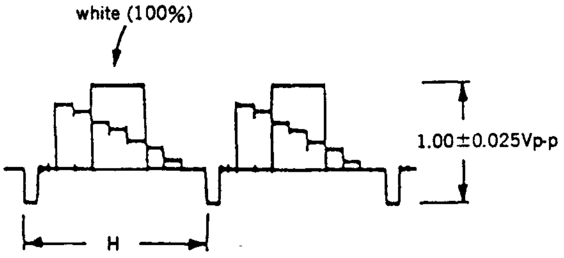

Fig. 4-26.

4-5-12. C OUT Level Adjustment (VA-64 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	J650 (S VIDEO) chroma signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV666
Specified value	0.286±0.015Vp-p

Note : Set the POWER switch (FK-47 board S509) to be in the "CAMERA" mode and input the color bar signal by the component from the VA-64 board CN650. (Refer to Fig. 4-1 (b).)

[Connection]

1) Terminate the chroma signal terminal of J650 (S VIDEO) at 75Ω.

[Adjustment Method]

1) Adjust the burst level to 0.286±0.015Vp-p with RV666.

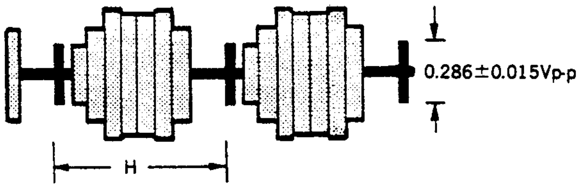

Fig. 4-27.

4-5-13. PB CCD Input Level Adjustment (VA-64 Board)

Mode	Playback
Signal	Alignment tape : Operation check (WR5-8NSE) color bar portion
Measurement point	IC650 pin ⑮
Measuring instrument	Oscilloscope
Adjustment element	RV655
Specified value	500±25mVp-p

[Adjustment Method]

1) Adjust to 500±25mVp-p with RV655.

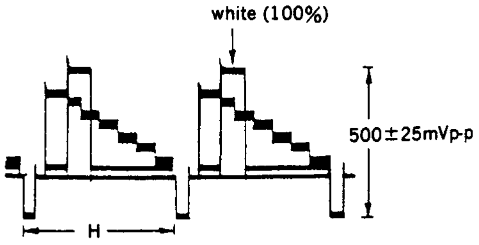

Fig. 4-28.

4-5-14. E Mode PB Y Level Adjustment (VA-64 Board)

Mode	Playback
Signal	Alignment tape for operation checking (WR5-8NSE) color bar portion
Measurement point	J650 (S VIDEO) Y signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV663
Specified value	1.020±0.025Vp-p

[Adjustment Method]

1) Adjust to 1.020±0.025Vp-p with RV663.

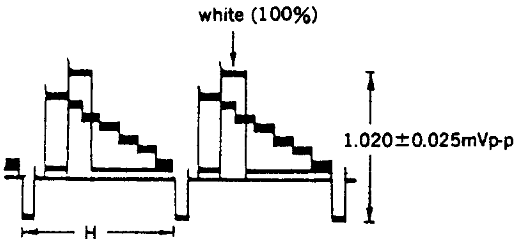

Fig. 4-29.

4-5-15. YD Adjustment (VA-64 Board)

Mode	Playback (PAUSE)
Signal	Alignment tape for operation checking color bar portion
Measurement point	Monitor TV display
Measuring instrument	
Adjustment element	RV416
Specified value	Flickering is not significantly visible.

[Adjustment Method]

1) Playback the signal.
2) Adjust RV416 so that flickering is not significantly visible on the PAUSE screen.

4-6. Digital Titler System Adjustment

[Adjustment Spequence]

1) Data Screen Frequency Adjustment
2) DDS Charactor Position Adjustment
3) 4FSC Frequency Adjustment
4) Controler Frequency Adjustment
5) Tracking TH Adjustment

4-6-1. Data Screen Frequency Adjustment (SS-134 Board)

Mode	E-E
Signal	No-signal
Measurement point	IC102 pin ⑲
Measuring instrument	Oscilloscope Frequency counter
Adjustment element	CT102
Specified value	15934±50Hz

Note: Connect the frequency counter thmough a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 15934±50Hz with CT102.

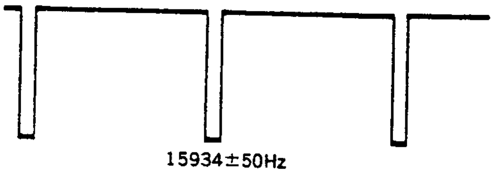

Fig. 4-30.

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4-6-2. DDS Character Position Adjustment (SS-134 Board)

Mode	Playback (Data screen ON)
Signal	Color bar (used signal of TG-7)
Measurement point	Monitor TV display
Measuring instrument	Monitor TV
Adjustmen element	CT101
Specified value	The inner line to the dividing line between red and blue.

[Adjustment Method]

1) Turn on the DATA SCREEN switch (FK-47 board S512).
2) Adjust the last inner line to the dividing line between red and blue with CT101. (Refer to Fig. 4-31)
3) Turn off the DATA SCREEN switch (FK-47 board S512).

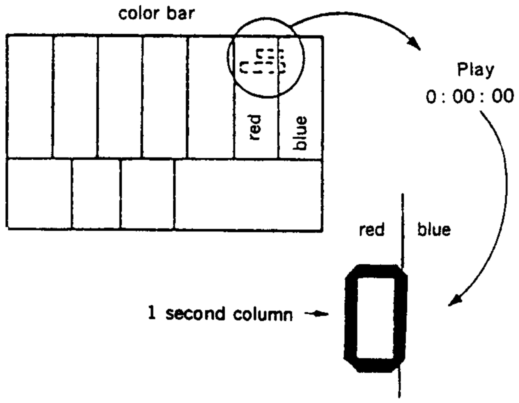

Fig. 4-31.

4-6-3. 4FSC Frequency Adjustment (FD-44 Board)

Mode	E-E
Signal	No-signal
Measurement point	Q314 Emitter
Measuring instrument	Oscilloscope Frequency counter
Adjustment element	CT302
Specified value	3579545±50Hz

Note : Connect the frequency counter thmough a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 3579545±50Hz with CT302.

4-6-4. Controller Frequency Adjustment (FD-44 Board)

Mode	E-E
Signal	No-signal
Measurement point	IC301 pin ⑪
Measuring instrument	Oscilloscope Frequency counter
Adjustment element	CT301
Specified value	9437±50kHz

Note : Connect the frequency counter thmough a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Adjustment Method]

1) Adjust to 9437±50kHz with CT301.

4-6-5. Tracking TH Adjustment (FD-44 Board)

Mode	E-E
Signal	Staircase (8 stairs)
Measurement point	CH 1 : CN201 pin ⑰ (Staircase input) CH 2 : IC303 pin ① (A/D select output)
Measuring instrument	Oscilloscope
Adjustment element	RV302
Specified value	Staircases to the second stair should be fetched and the third one should not be fetched.

[Adjustment Method]

1) Adjust to satisfy the specified value with RV302. (Refer to Fig. 4-32.

Note : In the case that ten staircases are used. the third stair should be fetched and the fourth one should not be fetched.

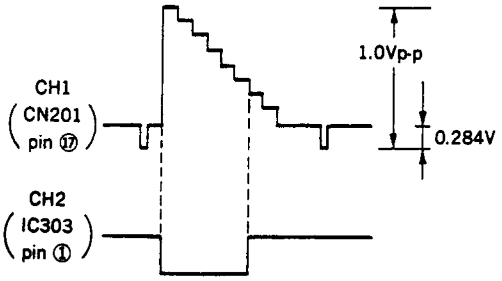

Fig. 4-32.

4-7. AUDIO SYSTEM ADJUSTMENT

- Perform adjustment with the color bar signal used as the video input signal.

Connect the audio system measuring instrument as shown in the following figure as well as the video system measuring instrument, and perform the adjustment at the 「Video」 position of the power switch.

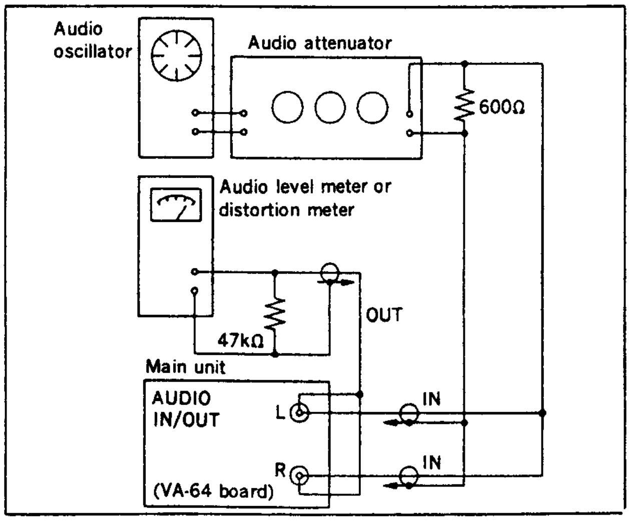

Fig. 4-33.

[Adjustment Spequence]

1) Recording Matrix Adjustment
2) AFM Carrier Frequency Check
3) IR Adjustment
4) Deviation Adjustment
5) Playback Matrix Adjustment
6) Recording AFM Carrier Level Adjustment
7) Playback Level Adjustment
8) Overall Output Level Check
9) Overall Frequency Characteristics Check
10) Overall Distortion Check
11) Overall Noise Level Check

4-7-1. Recording Matrix Adjustment (AU-99 Board)

Mode	Recording
Signal	400Hz, −7.5dBs both L and R
Measurement point	IC401 pin ③
Measuring instrument	Audio level meter
Adjustment element	RV401
Specified value	Less than 5mVp-p

[Adjustment Method]

1) Adjust to less than 5mVp-p with RV401.

4-7-2. AFM Carrier Frequency Check (AU-99 Board)

Mode	Recording
Signal	No-signal
Measurement point	L : IC403 pin ⑧ R : IC404 pin ⑧
Measuring instrument	Frequency counter
Specified value	L : 1.50±0.02MHz R : 1.70±0.02MHz

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

[Checking Method]

1) Turn off the output of the audio oscillator.
2) Check that the AFM carrier frequency in L : 1.50±0.01MHz and R : 1.70±0.02MHz.

4-7-3. IR Adjustment (AU-99 Board)

Mode	Self-recording and playback
Signal	Record no signal by inserting shorting plugs into andio input jacks (both L and R). Playback the recorded section.
Measurement point	L : IC403 pin ㊹ − IC403 pin ⑥ R : IC404 pin ㊹ − IC404 pin ⑥
Measuring instrument	Digital voltmeter
Adjustment element	L : RV405 R : RV407
Specified value	Less than ±10mV

[Adjustment Method]

1) Adjust alternately the RV405 and the RV407 to be below ±10mV.

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4-7-4. Deviation Adjustment (AU-99 Board)

Mode	Playback
Signal	Alignment tape for AFM stereo checking operation (WR5-9NS). Monoscope portion.
Measurement point	L : IC403 pin ㉔ R : IC404 pin ㉔
Measuring instrument	Level meter
Adjustment element	L : RV404 R : RV408
Specified value	−15.0±0.2dBs

[Adjustment Method]

1) Adjust alternately the RV404 and the RV408 to be −15.0±0.2dBs.

4-7-5. Playback Matrix Adjustment (AU-99 Board)

Mode	Self-recording and playback
Signal	Record 400Hz/−7.5dBs signal by connecting audio oscillator to R-channel audio input jack. Insert a shorting plug into L-channel audio input. Playback the recorded section.
Measurement point	L-channel audio output jack
Measuring instrument	Level meter
Adjustment element	RV402
Specified value	Less than −40dBs

[Adjustment Method]

1) Adjust to be below −40dBs with the RV402.

4-7-6. Recording AFM Carrier Level Adjustment (AU-99 Board)

Mode	Recording
Signal	No signal Insert a short plug into L-channel audio input jack only. Don't insert any play into R-channel.
Measurement point	W401 pin ⑭ (REC AFM RF)
Measuring instrument	Oscilloscope
Adjustment element	RV403 RV406
Specified value	80±5mV

[Adjustment Method]

1) Adjust alternately the RV403 and the RV406 to be 80±5mV.

4-7-7. Playback Level Check

Mode	Playback
Signal	Alignment tape : Operation checking (WR5-5NSP)
Measurement point	Audio output L 〔R〕 terminal
Measuring instrument	Audio level meter
Specified value	−7.5±2dBs

[Checking Method]

1) Confirm that the audio output level is −7.5±2dBs.

4-7-8. Overall Output Level Check

Mode	Self-recoading and playback
Signal	400Hz, −7.5dBs
Measurement point	Audio output L 〔R〕 terminal
Measuring instrument	Audio level meter
Specified value	−7.5±3dBs

[Checking Method]

1) Recoad the signal.
2) Playback the recoding section.
3) Make sure that the audio output level is −7.5±3dBs.

4-7-9. Overall Frequency Characteristics Check

Mode	Self-recording and playback
Signal	Ⓐ 400Hz, −17.5dBs Ⓑ 30Hz, −17.5dBs Ⓒ 10Hz, −17.5dBs
Measurement point	Audio output L 〔R〕 termial
Measuring instrument	Audio level meter
Specified value	With the 400Hz playback output level as 0dB, the playback output level of 30Hz and 10kHz is 0±3dB

[Checking Method]

1) Record signal Ⓐ through Ⓒ in order.
2) Playback the recorded sections.
3) With the 400Hz playback output level as 0dB, confirm that the playback output level of 30Hz and 10kHz is 0±3dB.

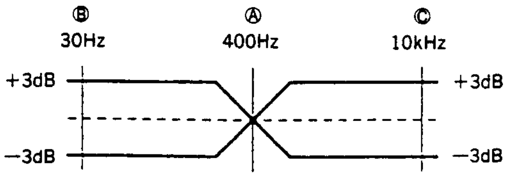

Fig. 4-34.

4-7-10. Overall Distortion Check

Mode	Self recording and playback
Signal	400Hz, −7.5dBs
Measurement point	Audio output L 〔R〕 terminal
Measuring instrument	Distorsion meter
Specified value	Less than 0.8%[*1]

[Checking Method]

1) Record the signal.
2) Playback the recorded section.
3) Confirm that the distortion is less than 0.8%.[*1]

[*1] Value when 200Hz to 3kHz BPF is used.

4-7-11. Overall Noise Level Check

Mode	Self-recording and playback
Signal	No signal (Shorting plug is inserted into audio input jack)
Measurement point	Audio L 〔R〕 input terminal
Measuring instrument	Audio level meter
Specified value	Less than −61.5dBs[*2]

[Checking Method]

1) Record the signal
2) Playback the recorded section
3) Make sure that the noise level is less than −61.5dBs.[*2]

[*2] Value when IHF-A hearing correction filter is used.

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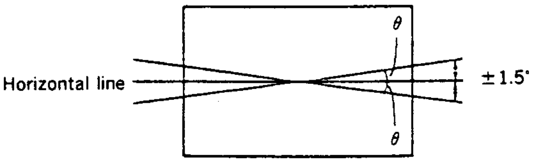
4-8. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT (TYPE A) (VF-27 BOARD)

4-8-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Specified value	See Fig. 4-35

[Adjustment Method]

1) By turning RV904 (BRIGHT), adjust for a luminance level which provides appropriate visibility of the CRT screen.
2) Loosen the DY (deflection yoke) tightening nut.
3) Make the image horizontal by rotating DY.
4) Retighten the DY tightening nut. (Do not tighten excessively.)


θ
Horizontal line
±1.5°
θ

Specified value : Image orientation within ±1.5° of horizontal line.

Fig. 4-35.

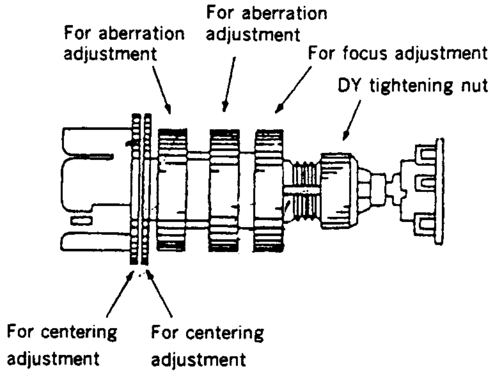

For aberration adjustment
For aberration adjustment
For focus adjustment
DY tightening nut
For centering adjustment
For centering adjustment

Fig. 4-36.

4-8-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Specified value	See Fig. 4-37.

[Adjustment Method]

1) Turn the centering adjustment rings to provide an image with even right, left, upper and lower margins. (See Fig. 4-36.)

Note : Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation which exhibits median displacements of the image.

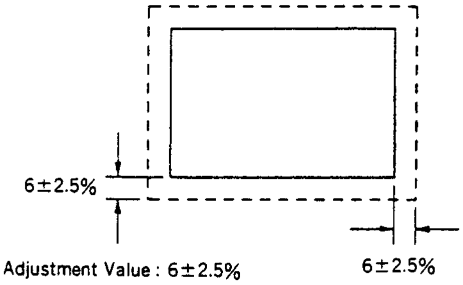

6±2.5%
Adjustment Value : 6±2.5%
6±2.5%

Fig. 4-37.

4-8-3. Focus Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion

[Adjustment Method]

1) Adjust for optimum focus using the focus ring. (See Fig. 4-36.)

4-8-4. Aberration Adjustment

Mode	E-E
Signal	Dot pattern
Specified value	See Fig. 4-38.

[Adjustment Method]

1) Use the aberration adjustment rings to adjust any trailing dots to within 2 times the dot diameter and any fan shaped aberrations to within the dot diameter.
2) If off center, repeat the Centering Adjustment.

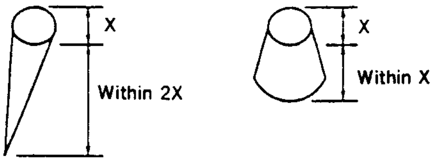


Fig. 4-38.

4-8-5. Horizontal Oscillation Frequency Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP)
Measurement point	CN904 pin ⑤
Measuring instrument	Digital voltmeter or oscilloscope (DC range)
Adjustment element	RV901
Specified value	$2.60 \pm 0.05V_{DC}$

[Adjustment Method]

1) Adjust to $2.60 \pm 0.05V_{DC}$ using RV901.

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4-8-6. Horizontal Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for cheking operation (WR5-5NSP) Monoscope portion
Adjustment element	C911
Specified value	6.0±3.0%

[Adjustment Method]

1) Line up the upper and lower sections of the monoscope image with the upper and lower edges of the screen by rotating RV902.
2) Rotate RV904 to set the brightness to the normal level.
3) Short or open the pattern (A) of the H size adjustment capacitor (C911) to provide horizontal overscans of 6.0±3.0% (total of left and right). (See Fig. 4-40.)

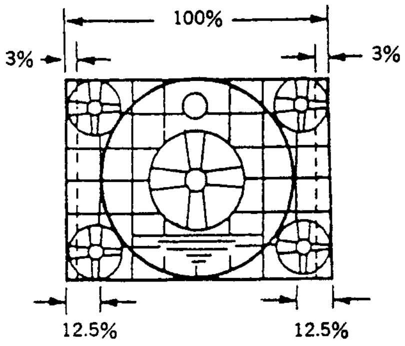
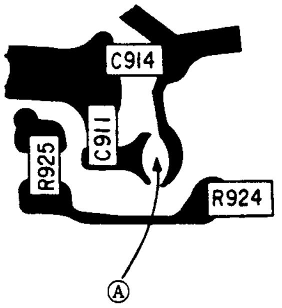


Fig. 4-39.



VF-27 Board
(conductor side)

A section	H size
Open	Large
Short	Small

Fig. 4-40.

4-8-7. Vertical Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	RV902
Specified value	6.0±3.0%

[Adjustment Method]

1) By turning RV902, adjust vertical overscan to 6.0±3.0% (upper and lower total).

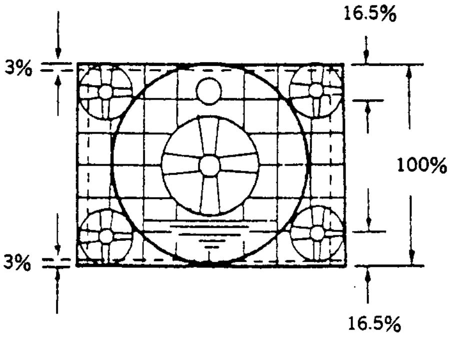


Fig. 4-41.

4-8-8. Brightness, Contrast Adjustments

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	Brightness : RV904 Contrast : RV903

[Adjustment Method]

1) Perform brightness and contrast adjustments alternately until the bright and dark areas of a gray scale are displayed correctly. (The bright areas should not be made too bright to avoid a fuzzy display of the cross-hatches in the monoscope circle, and the brightness of the dark areas should be such that discrimination between the darkest and second darkest area is possible.)

4-8-9. Horizontal Amplitude, Vertical Amplitude and Focus Checks

Values should conform to specifications given in 4-8-6. Horizontal Amplitude Adjustment and 4-8-7. Vertical Amplitude Adjustment. If not. readjust accordingly, and repeat 4-8-8. Brightness, Contrast Adjustments. In this case, focus needs to be checked. If the image is not clear, perform 4-8-3. Focus Adjustment and 4-8-4. Aberration Adjustment.

4-9. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT (TYPE B) (VF-26 BOARD)

4-9-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Specified value	See Fig. 4-43.

[Adjustment Method]

1) Adjust the volume array Ⓓ (BRIGHT) for appropriate brightness on CRT screen. (See Fig. 4-44.)
2) Loosen the DY (deflection yoke) tightening nut. (See Fig. 4-42.)
3) Make a picture horizontal by turning the DY.
4) Retighten the nut. (Do not tighten excessively.)

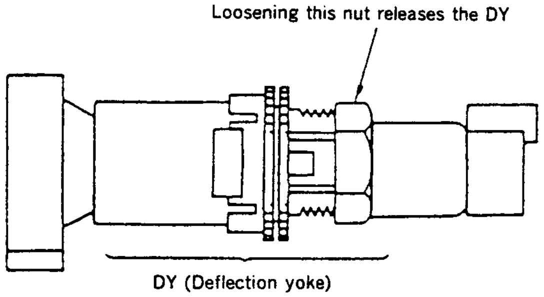
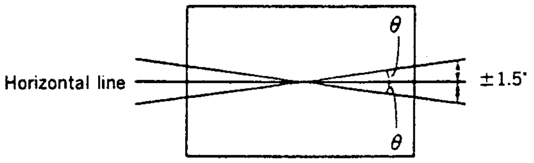
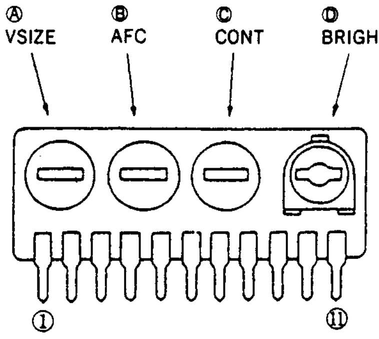


Fig. 4-42.



Specified value: Image orientation within±1.5° of horizontal line.

Fig. 4-43.



Volume array (CP901)

Fig. 4-44.

4-9-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Specified value	See Fig. 4-46.

[Adjustment Method]

1) Turn the centering adjustment rings to provide an image with even right, left, upper and lower margins. (See Fig. 4-45.)

Note: Since the cenering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation which exhibits median displacements of the image.

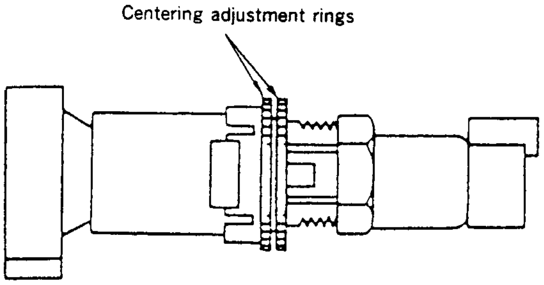


Fig. 4-45.

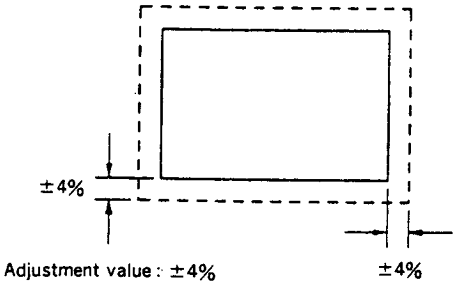


Fig. 4-46.

4-9-3. AFC Adjustment

Mode	E-E or Camera standby
Signal	Color bar
Measurement Point	C915 ⊕ side
Measuring instrument	Digital voltmeter or oscilloscope (DC range)
Adjustment element	Volume array Ⓑ (AFC)
Specified value	$2.6\pm0.1V_{DC}$

[Adjustment Method]

1) Adjust volume array Ⓑ (AFC) for $2.6\pm0.1V_{DC}$. (See Fig. 4-44.)

4-9-4. Horizontal Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	C905
Specified value	6.0±3.0%

[Adjustment Method]

1) Line up the upper and lower section of monoscope image with the upper and lower edges of the screen by rotating volume array Ⓐ (V SIZE). (See Fig. 4-44.)
2) Rotate volume array Ⓓ (BRIGHT) to set the brightness to the normal level.
3) Short or open the pattern $\boxed{A}$ of the H size adjustment capacitor (C905) to provide horizontal overscans of 6.0± 3.0% (total of left and right). (See Fig. 4-48.)

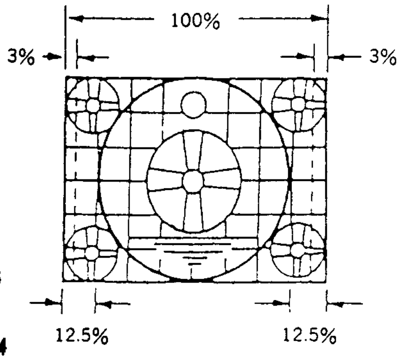


Fig. 4-47.

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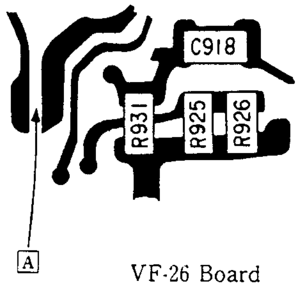


VF-26 Board
(conductor side)

A section	H size
Open	Large
Short	Small

Fig. 4-48.

4-9-5. Vertical Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	Volume array Ⓐ (V SIZE)
Specified value	6.0±3.0%

[Adjustment Method]

1) By turning volume array Ⓐ (V SIZE), adjust vertic overscan to 6.0±3.0% (upper and lower total). (See Fig. 4-49.)

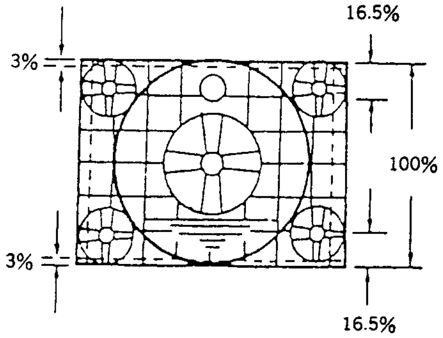


Fig. 4-49.

4-9-6. Focus Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	RV901

[Adjustment Method]

1) Adjust to the best focus point with RV901.

4-9-7. Brightness, Contrast Adjustments

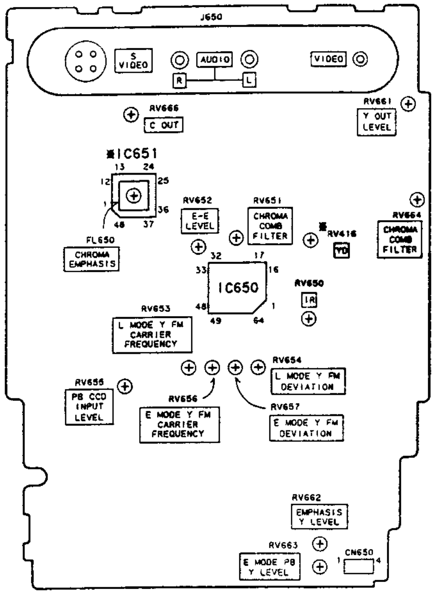
Mode	Playback
Signal	Alignment tape for checking operation (WR5-5NSP) Monoscope portion
Adjustment element	Brightness: Volume array Ⓓ (BRIGHT) Contrast: Volume array Ⓒ (CONT)

[Adjustment Method]

1) Adjust volume array Ⓓ (BRIGHT) and Ⓒ (CONT) alt nately until the bright and dark areas of a gray scale a displayed correctly. (The bright areas should not made too bright to avoid a fuzzy display of the cro hatches in the monoscope circle, and the brightness of t dark areas should be such that discrimination betwe the darkest and second darkest areas is possible.) (See Fig. 4-47.)

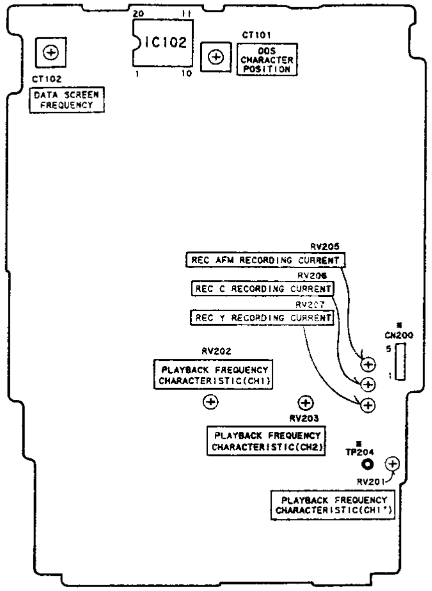
4-10. ADJUSTING PART LOCATION DIAGRAM

VA-64 BOARD (COMPONENT SIDE)


J650
S VIDEO
AUDIO
R
L
VIDEO
RV666
C OUT
RV661
Y OUT LEVEL
*IC651
13
24
12
25
1
36
48
37
FL650
CHROMA EMPHASIS
RV652
E-E LEVEL
RV651
CHROMA COMB FILTER
*RV416
YD
RV664
CHROMA COMB FILTER
32
17
33
16
IC650
48
1
49
64
RV650
IR
RV653
L MODE Y FM CARRIER FREQUENCY
RV654
L MODE Y FM DEVIATION
RV655
PB CCD INPUT LEVEL
RV656
E MODE Y FM CARRIER FREQUENCY
RV657
E MODE Y FM DEVIATION
RV662
EMPHASIS Y LEVEL
RV663
E MODE PB Y LEVEL
CN650
1
4

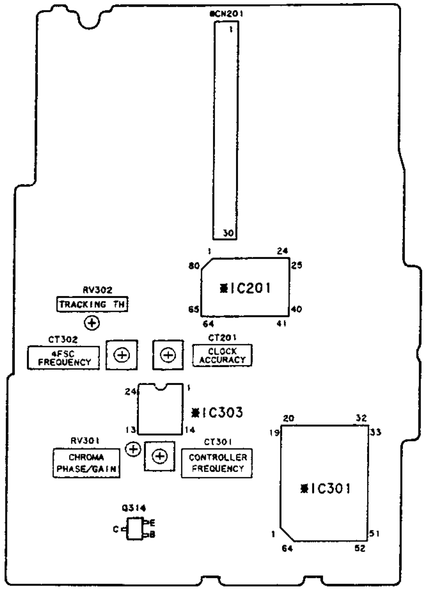
*: Indicates a adjustment element mounted on the conductor side.

SS-134 BOARD (COMPONENT SIDE)


20
11
IC102
1
10
CT101
OOS CHARACTER POSITION
CT102
DATA SCREEN FREQUENCY
RV205
REC AFM RECORDING CURRENT
RV206
REC C RECORDING CURRENT
RV207
REC Y RECORDING CURRENT
*CN200
5
1
RV202
PLAYBACK FREQUENCY CHARACTERISTIC(CH1)
RV203
PLAYBACK FREQUENCY CHARACTERISTIC(CH2)
*TP204
RV201
PLAYBACK FREQUENCY CHARACTERISTIC(CH1')

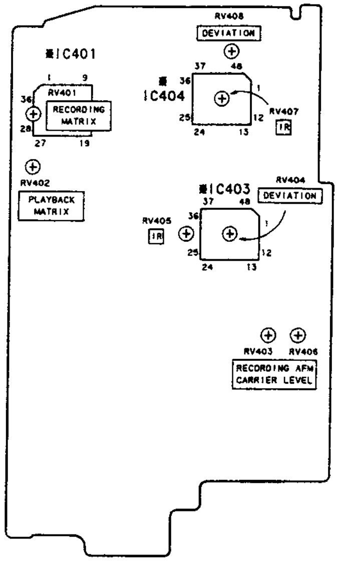
*: Indicates a adjustment element mounted on the conductor side.

FD-44 BOARD (COMPONENT SIDE)


*CN201
1
30
1
24
80
25
*IC201
65
40
64
41
RV302
TRACKING TH
CT302
4FSC FREQUENCY
CT201
CLOCK ACCURACY
24
1
*IC303
13
14
RV301
CHROMA PHASE/GAIN
CT301
CONTROLLER FREQUENCY
20
32
19
33
*IC301
1
51
64
52
Q314
C
E
B

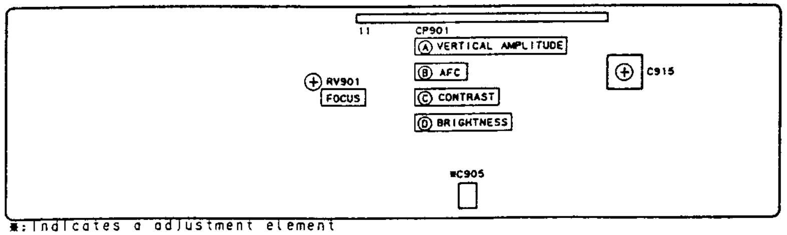
*: Indicates a adjustment element mounted on the conductor side.

AU-99 BOARD (COMPONENT SIDE)


RV408
DEVIATION
*IC401
1
9
RV401
36
RECORDING MATRIX
28
27
19
*IC404
37
48
36
1
25
12
24
13
RV407
IR
RV402
PLAYBACK MATRIX
*IC403
37
48
RV404
DEVIATION
RV405
IR
36
1
25
12
24
13
RV403
RV406
RECORDING AFM CARRIER LEVEL

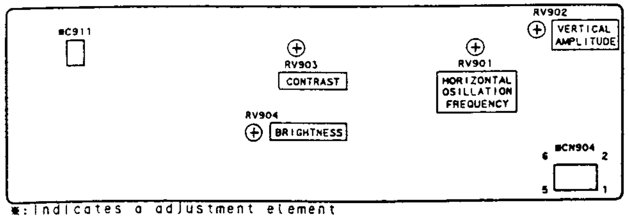
*: Indicates a adjustment element mounted on the conductor side.

VF-26 BOARD (COMPONENT SIDE)


11
CP901
Ⓐ VERTICAL AMPLITUDE
Ⓑ AFC
Ⓒ CONTRAST
Ⓓ BRIGHTNESS
RV901
FOCUS
C915
*C905

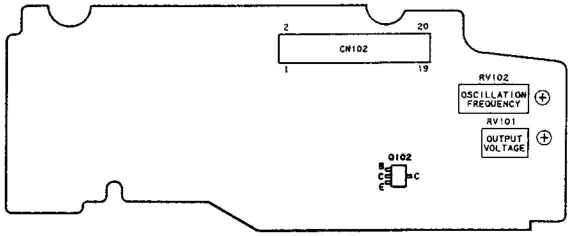
*: Indicates a adjustment element mounted on the conductor side.

VF-27 BOARD (COMPONENT SIDE)


*C911
RV903
CONTRAST
RV904
BRIGHTNESS
RV901
HORIZONTAL OSILLATION FREQUENCY
RV902
VERTICAL AMPLITUDE
*CN904
6
2
5
1

*: Indicates a adjustment element mounted on the conductor side.

FU-97 BOARD (COMPONENT SIDE)


2
20
CN102
1
19
RV102
OSCILLATION FREQUENCY
RV101
OUTPUT VOLTAGE
Q102
B
C
E
C

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